

Label: "OSMRE-2018-00104"

Created by:ldavis@osmre.gov

Total Messages in label:261 (99 conversations)

Created: 06-27-2018 at 14:24 PM

Conversation Contents

Fwd: Requested Documents from Collection

Attachments:

/49. Fwd: Requested Documents from Collection/1.1 Documents.zip

"Daniels, Joseph" <joseph_daniels@ios.doi.gov>

From: "Daniels, Joseph" <joseph_daniels@ios.doi.gov>
Sent: Fri Sep 01 2017 14:03:11 GMT-0600 (MDT)
To: Landon Davis <ldavis@osmre.gov>
CC: Steven Hunt <steven_hunt@ios.doi.gov>, Kurtis McDowell <kurtis_mcdowell@ios.doi.gov>
Subject: Fwd: Requested Documents from Collection
Attachments: Documents.zip

----- Forwarded message -----

From: Daniels, Joseph <joseph_daniels@ios.doi.gov>
Date: Fri, Sep 1, 2017 at 4:02 PM
Subject: Requested Documents from Collection
To: Joseph Daniels <joseph_daniels@ios.doi.gov>

Hi Mr. Davis,

Your requested documents from your OS laptop collection are zipped and attached. The Downloads folder was too large so it has been sent as a Google Drive shared folder.

 [Downloads.zip](#)

--
Best Regards,

Joseph Daniels
Desktop Support Analyst (Contractor - NuAxis Innovations)
End User Services Division - Desktop & Peripherals Support
Office of the Chief Information Officer
US Department of the Interior
Work Phone: 202-208-4452 Cell Phone: 571-499-2439
joseph_daniels@ios.doi.gov
www.DOI.gov/OCIO

--

Best Regards,

Joseph Daniels

Desktop Support Analyst (Contractor - NuAxis Innovations)

End User Services Division - Desktop & Peripherals Support

Office of the Chief Information Officer

US Department of the Interior

Work Phone: 202-208-4452 Cell Phone: 571-499-2439

joseph_daniels@ios.doi.gov

www.DOI.gov/OCIO



Purpose:

The following has been provided by West Virginia Department of Environmental Protection (DEP) as documentation supporting their conclusion that Director Pizarchik's July 27, 2016 memo will effectively have the same effect as the Stream Protection Rule and is a back door effort to implementing the SPR.

West Virginia DEP believes that, as to the relationship of the CWA and SMCRA, the directives detailed in the memorandum are an attempt to implement applicable provisions of the SPR now before the rule is final and that the manipulation of the scenarios laid out in the directives with existing laws and regulations is definitely an attempt to do it through the back door. Note, there are numerous other parts to the SPR that do not relate directly to the CWA and the memo and are not addressed here, but a large portion duplicates and definitely overlaps the CWA requirements.

As documentation, West Virginia DEP provided the following language from six of the memo's directives and provided detail of how this language links directly to the SPR or is tied to the language of the SPR as support for implementation. Also, it is important to note that the existing regulatory framework provides only vague support for many of the "assumptions" of authority detailed in the memo.

SMCRA Enforcement Directives:

1. "Discharges from areas disturbed by mining activity must comply with all applicable state and Federal water quality laws and regulations and within effluent limitations in force at each respective outfall. Discharges in violation of these standards are violations of SMCRA regulations in accordance with 30 C.F.R. §§ 816.42 and 817.42, or the approved, mandatory state counterpart."

- *Language referring to each respective outfall is not in current SMCRA regulations; instead language refers to effluent limitations in 40 CFR part 434 and no mention of outfalls. However in SPR, OSM replaces reference to effluent limitations in 40 CFR part 434 with a reference to the effluent limitations established in the NPDES permit for the operation. Through*

this Directive OSM is enforcing the SPR prior to it being a final rule. Also, this leap is significant in incorporating CWA compliance/authority into SMCRA.

2. “A determination that a WQS violation exists is a violation of SMCRA regulations in accordance with 30 C.F.R. §§ 816.42 and 817.42, or the approved, mandatory state counterpart.”

○ *Directive 1’s conclusion that a violation exists at a respective outfall sets the stage for the enforcement of CWA violations by making a CWA Violation a SMCRA violation. This sets the stage for Directive 3 regarding material damage, which is a key component of the SPR.*

3. “If OSMRE is presented with reason to believe that a coal permittee is failing to comply with NPDES effluent limitations, meet applicable WQSSs, evidence exists of adverse trends at water monitoring stations which could indicate and confirm a release of toxic mine drainage, or evidence exists of material damage to the hydrologic balance outside the SMCRA permit, then appropriate enforcement action (federal inspection or TDN) is required... If OSMRE becomes aware of several consecutive examples of self-reported noncompliance with NPDES permit effluent limitations (daily maximum or monthly average), then evaluation of the incidences will occur with appropriate enforcement action as required to ensure that the SMCRA mandated obligation to correct the non-compliances has occurred.”

○ *SMCRA’s existing regulations do not define “material damage to the hydrologic balance outside of the permit area” but the SPR’s definition is designed to protect all designated uses of surface water and all existing and reasonably foreseeable uses of surface water and groundwater outside the permit area and would mean any adverse impact from surface or underground mining operations on the quantity or quality of surface water and groundwater, or the biological condition of a perennial or intermittent stream, that would preclude any designated surface water use. Water quality standards are set by the state to protect a stream’s designated use and effluent limits are placed in NPDES permits at levels designed to protect such water quality standards which, in turn, protect the stream’s designated use. By focusing on violations of effluent limitations and material damage to the*

hydrologic balance outside the SMCRA permit in Directive 3, OSM is implementing the SPR's definition of material damage prior to it becoming a final rule.

4. “Any discharge from a SMCRA permit which has the potential to cause material damage to the hydrologic balance outside the permit area, a discharge of toxic mine drainage, a potential long-term discharge that does not meet NPDES permit effluent limitations or WQS, or any indication that the probable hydrologic consequences determination in the approved permit is no longer valid, requires appropriate enforcement action in order to prevent adverse impacts. Appropriate action may include modification of the hydrologic reclamation plan. In addition, if required, modifications of the reclamation plan result in an increased cost, the performance bond may be adjusted to reflect the additional costs.”

○ *Directive 3 set up the material damage threshold and OSM uses this scenario to require bond adjustments with no guidance on the type or requirements of such bond adjustments; however the SPR introduces specific bonding requirements and methodologies for such scenarios. Also, OSM has announced proposed rulemaking regarding self-bonds and SMCRA's bonding system. By requiring bond adjustments, with no guidance on how and why, for such a scenario, OSM is implementing the SPR prior to it becoming a final rule.*

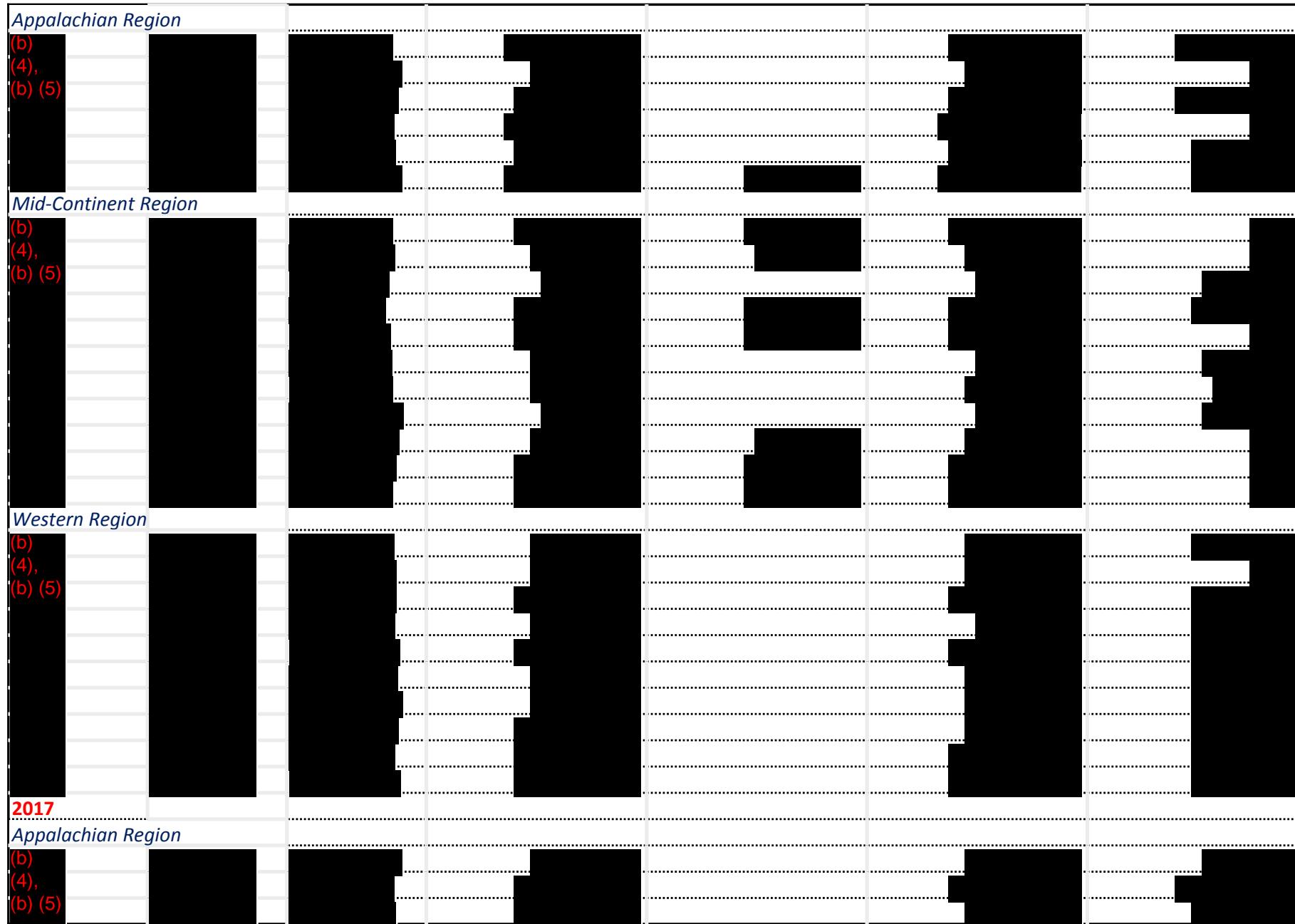
5. “Ensure, through appropriate oversight, that SMCRA permits are not issued where reclamation required by SMCRA is not feasible. Specifically, restoration of postmining land uses precludes any use that would pose any actual or probable threat of water pollution. Restoration of the land productivity and premining uses also includes restoration of pre-mining water resources. Therefore, in the event the probable hydrologic consequences determination or cumulative hydrologic impact assessment indicates coal mining operations are likely to result in long-term violations of state or federal WQS, or a long-term discharge of toxic mine drainage that may cause material damage outside the permit area, or the pre-mining water resources cannot be restored, the permit application must be modified to prevent such impacts. If permit modification is not feasible, then the permit application must be denied.

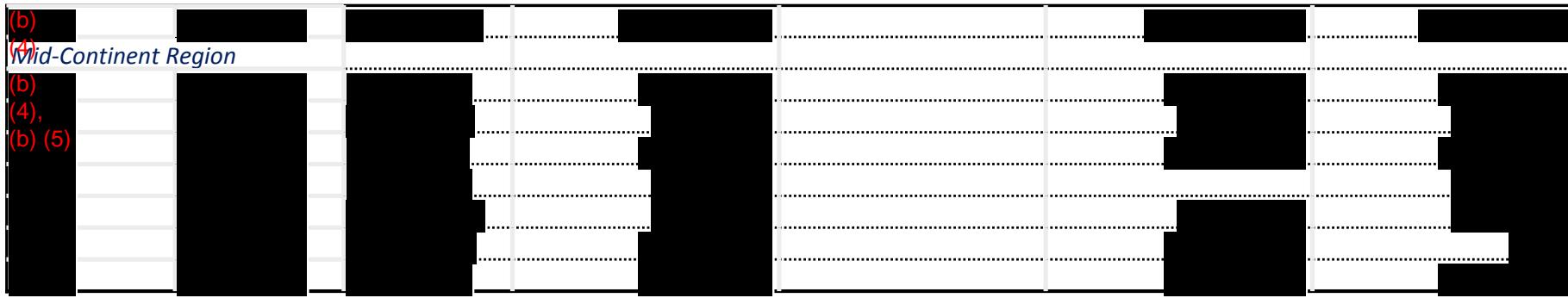
- *The proposed definition for Material Damage acknowledges that the mere “possibility” of an acid or toxic discharge does not provide an adequate basis for permit denial. Instead, under the SPR, for a permit to be denied, there must be some probability of the formation of acid or toxic mine drainage that may continue after the completion of mining and land reclamation, and there must be a reasonable likelihood that the reclamation plan proposed by the applicant will not be capable of preventing the formation of that drainage. The language of Directive 5 is essentially a repeat of the SPR’s proposed definition for Material Damage so it is obvious that OSM is implementing the SPR before it is final.*

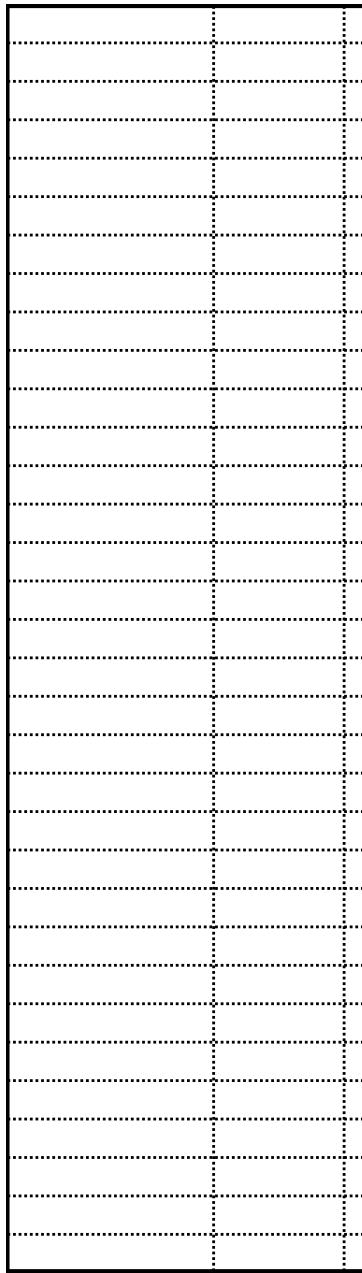
6. “Ensure through appropriate oversight, that discharges of pollution discovered during bond release inspections are properly addressed prior to authorizing bond release. The Federal regulations at 30 C.F.R. § 800.40(b)(1) require an evaluation of any surface or groundwater pollution that may be occurring at the time of bond release and a determination of the potential for such pollution to continue as well as the cost of correcting such pollution. This evaluation would include review of all violations of all applicable NPDES effluent limitations and WQS in effect at the time of bond release request, discharges of toxic mine drainage, and any discharge likely to cause material damage to the hydrologic balance. In the event the hydrologic reclamation plan cannot be modified and action taken to correct the cause of a pollutional discharge, then the performance bond must be adjusted to address the cost of treating the discharge to reduce the toxic content, meet NPDES effluent limitations or WQS, and prevent material damage to the hydrologic balance outside the permit area.

- *Directive 6 makes the leap that the amount of a SMCRA bond is designed for land reclamation and long-term treatment of water, if required. This requirement to treat water with bond proceeds is not in the current regulatory framework; instead OSM has attempted to implement this through policy and directives to the states. However, the SPR is specifically designed to require financial assurances to guarantee treatment of long term discharges and adding more specific criteria and procedures for bond release. For example, the SPR requires the permittee to operate and maintain water treatment facilities until the regulatory authority authorizes their removal based upon monitoring*

data demonstrating that influent to the facilities meets all applicable water standards and effluent limits without treatment. OSM's use of Directive 6 essentially implements the SPR's bonding requirements prior to the final rule.



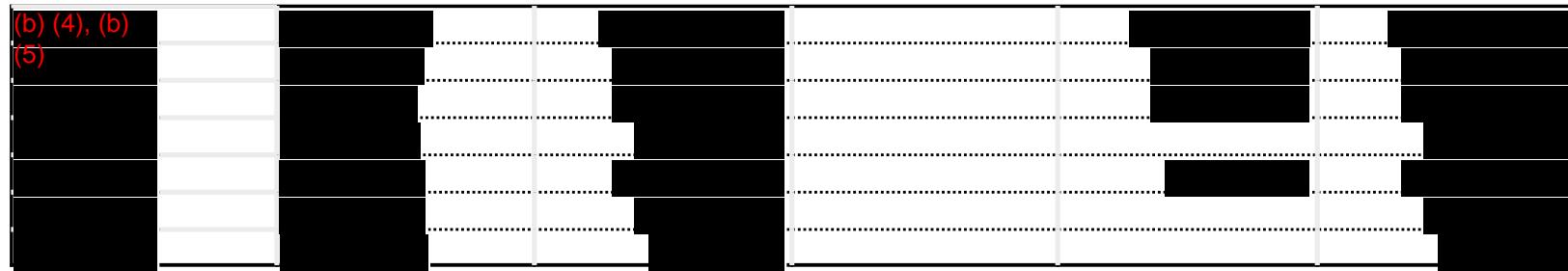






(b) (4), (b)
(5)

2017



Landon Tucker Davis

(b) (6)
[REDACTED]

Education:

Radford University, Radford, VA--May 2013
Bachelor of Science in **Journalism**

Work Experience:

58th Presidential Inaugural Committee Office of the Public Liaison Dec. 2016-Jan 2017
General Liaison/Diversity Outreach Salary: \$[REDACTED]

Donald J. Trump for President, Inc. Oct 2015- Novr 2016
Salary: \$[REDACTED]

- ***Virginia State Field Director***

Directed GOTV operations, direct mail, volunteer recruitment and public endorsements for the campaign which led to a resounding victory in the March 1 primary.

- ***West Virginia State Director***

Recruited delegates for the Republican National Convention, implemented GOTV plan to elect delegates and secured a resounding victory for Mr. Trump in the May 10 primary. Secured the West Virginia Coal Association endorsement (the first endorsement made during a primary).

- ***Virginia Deputy State Director***

Managed GOTV operations with grassroots activists/party officials as well as federal, state and local elected officials. Organized an energy policy roundtable with Mr. Trump and local coal operators/business owners.

Americans for Prosperity- Virginia

Regional Director May 2015-Aug. 2015
Salary: \$[REDACTED]

- Built grassroots relationships for the state chapter with political, business, media and community leaders.
- Mobilized and educated grassroots activists on issues within the organization's mission.
- Utilized activists to become involved in AFP volunteer phone banking, door-to-door canvassing, and neighborhood events on state-based policy initiatives.

Ed Gillespie for Senate Regional Director

Jan. 2014-Nov. 2014
Salary: \$[REDACTED]

- Directed get-out-the-vote and convention operations in Virginia's 5th, 6th and 9th Congressional Districts.
- Worked with state and local elected officials as well as congressional campaigns to implement GOTV strategy while meeting each region's own specific needs.
- Prepared and disseminated talking points to key leaders regarding relevant issues of the campaign.
- Represented candidate at various community events (Rotary clubs, chambers of commerce and trade associations).

Nick Rush for Delegate

May 2013-Nov. 2013

Campaign Manager

Salary: \$(b) (6)

- Performed day-to-day management of incumbent's House of Delegates campaign.
- Lead extensive mail program while directing campaign strategy with earned media and get-out-the-vote efforts.
- Developed and maintained relationships with donors and constituents.
- Drafted press releases for local and state media.
- Developed copy for collateral material and web content (brochures, direct mail, Facebook and Twitter).

Faces of Coal/Count on Coal

June 2012- April 2013

Outreach Director

Salary: \$(b) (6)

- Coordinated issue advocacy, earned media, event management, and coalition building.
- Represented organization at various trade shows and conferences.
- Worked to plan, organize and implement special events ranging from 2,000- 8,000 attendees.
- Maintained relationships with legislators, staff members, civic groups and business leaders.
- Coordinated volunteer operations for community events.
- Compiled data for funder reports, press packets and directed letters to the editor campaigns.

Clubs and Organizations:

Big Sandy Soil and Water Conservation Board, Director

Frederick Douglass Foundation

10th Amendment Foundation

Honorable Order of Kentucky Colonels

Appalachian Events Committee, Radford University

Republican Party of Buchanan County

Buchanan County Humane Society

Student Government Association, Southwest Virginia Community College

References:*(contact information available upon request)*

Ed W. Gillespie

Rep. Morgan Griffith

Virginia State Sen. Bill Carrico

Virginia Delegate Todd Pillion

Virginia Delegate Chris Head

Virginia Delegate Nick Rush

Virginia Delegate Terry Kilgore

West Virginia State Sen. Mark Maynard

Jerry Mullins, Vice President, National Mining Association

Jerry W. Kilgore, Fmr. Attorney General of Virginia

Jim Bunn, Fmr. President West Virginia Coal Association

John K. Matney, Fmr. President Rapoca Coal Company

John Raese, President and CEO of Greer Industries

Petrina Jones, Fmr. Executive Director, FACES of Coal- Virginia

Terry Headly, Executive Director, American Coal Council

Sandy Liddy Bourne, General Manager, George Allen Strategies

Donnie Ratliff, Fmr. Vice President of External Affairs, Alpha Natural Resources

Danny Smith, Fmr. Senior Vice President of Energy and Property, Norfolk Southern

Harry Childress, President, Virginia Coal and Energy Alliance

The White House
Presidential Personnel Office
SKC/SES BIO SHEET

This information is necessary to begin the clearance process. Return to White House Liaison when completed.

PART I: PERSONAL INFORMATION (TO BE COMPLETED BY THE CANDIDATE)

1. FULL NAME (Last, First, Middle): **Landon Tucker Davis**

2. SOCIAL SECURITY NUMBER:

(b) (6)

3. CURRENT RESIDENTIAL ADDRESS (Number, Street, City, State, ZIP Code)
(b) (6)

4. VOTING ADDRESS IN 2016 (Number, Street, City, State, ZIP Code, if different than current address)
(b) (6)

5. PLACE OF BIRTH (City, State; if not U.S., state, country)
(b) (6)

6. GENDER
Male

7. DATE OF BIRTH
(b) (6)

8. ETHNIC HERITAGE
(b) (6)

9. RACE
(b) (6)

10. POLITICAL PARTY
(b) (6)

11. HOME PHONE
(b) (6)

12. CELL PHONE
(b) (6)

13. WORK PHONE

14. PERSONAL EMAIL
(b) (6)

15. WORK EMAIL
landon_davis@ios.doi.gov

16. CURRENT POSITION (Title, Company)

Special Assistant to the Secretary, U.S. Department of the Interior

17. WORK ADDRESS (Number, Street, City, State, Zip)

1849 C Street, NW, Washington, DC, 20240

18. PLEASE LIST ALL SOCIAL MEDIA ACCOUNTS (Or say none if you have none)

(b) (6)

(b) (6)

19. EDUCATION (Degree, Institution, Year)

Bachelor of Science, Radford University, 2013

20. AWARDS

(b) (6)

21. MILITARY SERVICE (Rank, Branch, Years)

(b) (6)

22. PREVIOUS PRESIDENTIAL APPOINTMENTS

(b) (6)

PART II: POSITION INFORMATION (TO BE COMPLETED BY WHITE HOUSE LIAISON)

1. POSITION TITLE

2. AGENCY

2. APPOINTMENT TYPE

3. GRADE

4. OPM NUMBER

5. WH LIAISON NAME

6. WH LIAISON PHONE

7. WH LIAISON EMAIL

OSMRE Workload and Workforce Assessment

I. Overview of Region/Office: Western Region

The Western Region (WR) of the Office of Surface Mining Reclamation and Enforcement (OSMRE) is responsible for regulation and enforcement of surface coal mining operations and the reclamation of abandoned mine lands in the Western USA in accordance with the Surface Mining Control and Reclamation Act of 1977 (SMCRA). In states with approved State Programs (Utah, Colorado, New Mexico, Wyoming, North Dakota, Alaska, Montana) the WR has responsibility for program oversight, program amendments, grant funding, and federal lands coordination / management (Section 503, SMCRA) . In Federal Program states (California, Oregon, Washington, South Dakota, Idaho and Arizona), the WR is the lead regulatory authority (Section 504, SMCRA) for permitting and enforcement and is responsible for abandoned mine reclamation. The WR also has responsibility for Indian lands (Navajo, Hopi, Crow, and Northern Cheyenne)(Section 710, SMCRA) and actively assists the Navajo Nation, Crow, and Hopi Tribes in developing tribal regulatory programs. State Programs, Federal Programs and Indian land programs in the Western Region execute regulatory authority of over half the national coal production.

WR also serves as the central management and program analysis point to coordinate program and funding activities for the following programs: National Technical Innovation and Professional Services (TIPS); technology transfer support for the WR, states, tribes and OSMRE offices; information technology operations supporting the WR and TIPS; Geospatial Information Services (GIS) Services supporting GeoMine technologies and initiatives; and administrative support for TIPS and the WR.

The WR offices include the regional office in Denver, Colorado and four area offices in Casper (Wyoming), Albuquerque (New Mexico), Farmington (New Mexico) and Olympia (Washington).

II. Description of Overall Office Mission:

Office of the Regional Director

The Office of Regional Director is responsible for all OSMRE activity pursuant to both regulatory and abandoned mined land programs in the Western Region. Reporting to the Regional Director are Budget and Personnel, Equal Employment Opportunity, and three divisions: Program Support, Denver Field, and Technology Management.

Program Support Division

The Program Support Division (PSD) provides technical and management support to OSMRE's regulatory and abandoned mine lands programs within the WR, including states and tribes, and to OSMRE's field offices, OSMRE Headquarters, and other DOI bureaus and agencies. The PSD is organized into two branches, the Indian Programs Branch and Field Operations Branch, and an Inspection Team.

The Indian Program Branch administers the Indian Lands Program in the southwestern states, including Arizona, Colorado, New Mexico, and Utah and the Federal Programs for Arizona, California and Washington. The Indian Program Branch is responsible for all permitting activity and compliance with NEPA, Section 7 of the ESA and Section 106 of NHPA on Indian lands in the Southwest and in the State of Washington.

The Field Operations Branch is responsible for administering the Federal Lands Program in the Western Region through Federal lands cooperative agreements with Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming. The Field Operations Branch assists the Hopi Tribe and Navajo Nation with development and implementation of their tribal regulatory programs and oversees the Navajo Nation, Hopi Tribe, Alaska and New Mexico abandoned mined lands programs and the Alaska and New Mexico regulatory programs.

The Inspection Team is responsible for all inspection, enforcement and bond release activities on Indian lands and in the State of Washington and assisting with oversight inspections in Alaska and New Mexico.

Denver Field Division

The Denver Field Division is composed of two branches—Denver Field Branch (DFB) and Casper Area Office (CAO). DFD provides regulatory oversight of over half the national coal production, direct regulation on Indian Lands, program amendment processing, and other major program tasks.

Casper Area Office provides oversight for 8 state/tribal programs. CAO is the regulatory authority for both Federal and Indian Lands in the North Western United States. The CAO processes grants, reviews program amendments, and conducts both regulatory and oversight inspections, conducts NEPA on major permitting actions, and permits mines on Indian Lands.

DFB is responsible for oversight of two State Regulatory programs and two State AML programs including inspection and enforcement activities and grants processing; administration of the Federal Reclamation Program in the WR; processing of state program amendments; civil penalty assessments; civil penalty assessment conferences and TDN appeals. In addition, DFB provides regulatory and AML program expertise for national rulemaking efforts and participates on national teams.

Technical Management Division

The Technical Management Division (TMD) provides leadership, program direction, management, and administrative and financial services in support of the National Technical Innovation and Professional Services (TIPS) program. In addition, TMD responsibilities include: 1) national geospatial information services (GIS) and remote sensing imagery supporting GeoMine technologies and initiatives; 2) information technology operations supporting the WR and TIPS; 3) technology transfer support for the WR, states, tribes and other OSMRE offices; and 4) administrative support for the WR. TMD is unique to OSMRE in its responsibility to provide both National and Regional services necessitating coordination and collaboration across all offices within OSMRE and with SMCRA state and tribal partners. TMD is organized into three branches: the TIPS Technology and Training Services Branch (TTSB); the TIPS Geospatial Information Services Branch (GISB), and the Program Services Branch (PSB). In the aggregate, TMD employees offer expert services in geospatial information systems (GIS), engineering, remote sensing, geology, hydrology, information technology (IT), technical training, financial management and property management.

Critical Issues

Tribal Primacy

The Navajo Nation is actively seeking tribal primacy to regulate surface coal mining and reclamation operations on reservation lands under their jurisdiction and anticipates formally submitting a proposed Navajo regulatory program in September 2015. On the effective date of approval of the Navajo regulatory program by the Secretary, the Navajo Nation will be responsible for the regulation of surface coal mining and reclamation operations. OSMRE will be responsible for enforcing criminal actions associated with surface coal mining and reclamation operations on Navajo regulatory program lands under SMCRA.

Similarly, the Crow Tribe is Actively seeking tribal primacy to regulate surface coal mining and reclamation operations on reservation lands under their jurisdiction. Initially, they would assume primacy for inspection, enforcement, and exploration—followed by primacy for permitting at a later date. The Crow Tribe anticipates formally submitting a proposed Crow regulatory program in April 2015.

The WR anticipates a significant workload over the next 3-5 years to ensure success of the Navajo and Crow tribal primacy initiatives. The process of assuming tribal primacy includes extensive involvement by the Western Region in providing technical and administrative support. This will include increased training of and technical assistance to Navajo Nation tribal staff to ensure that they are proficient at review and approval of new permit and permit applications and to both Tribes for conducting inspection and enforcement activities. The goal of this assistance is the development of a proficient regulatory program and to fulfill OSMRE's trust responsibilities to the Tribes. Once this occurs OSMRE can reduce involvement to levels similar to oversight in states with approved State Programs. It is important to note that in addition to the training and technical assistance to the Navajo Nation technical staff, OSMRE will remain responsible for ongoing permitting activity on the Crow and Hopi Reservations.

Litigation

An increased level of public concern with coal mining and its impact on the environment has resulted in increased FOIA requests and litigation, which has significantly increased workload for Western Region over the last several years. This has had a direct effect on the workload associated with permitting, and compliance with NEPA and Section 7 of the ESA. Specifically, the issues raised through public participation are increasingly more complex and require more detail of

analysis in our NEPA, resulting in complex EA's and EIS's that require additional time to prepare and, if necessary, develop mitigation plans for mine activities. Combined together, these activities have resulted in a considerable workload increase while staffing has remained level.

GeoMine

The GIS branch is responsible for mapping and imagery support to the Western Region and OSMRE nationwide. The GISB is the lead group for the national level OSMRE GIS through GeoMine. This system will allow for information and data to be readily accessed by all employees up and down the organization. GeoMine is designed using the concept of dynamic change; meaning that it can be modified or added to easily by an individual office or offices to meet changing needs internally and externally. We envision developing our systems in an integrated program approach, in real time with our resource program specialists and managers at the level of the organization where the work is done; creating a healthy/efficient work environment through enhanced integrated workflow and business models. These initiatives were hampered by numerous vacant positions in 2014, and the lack of congressional approval of the president's proposed budget, which requested funds for GeoMine.

National TIPS Training Program

Central to the business model established for TIPS is the ability for the National program capacity to be leveraged by enlisting the collaboration of over 60 additional OSMRE and SMCRA state staff to carry out its nationwide support as a collateral duty. The abilities of OSMRE Regions and SMCRA state programs to sustain this level of support are diminishing due to increased workload and reduced workforce (FTE). Development of on-line training courses would realize travel avoidance and opportunity cost savings by preventing the need for instructors and students to incur travel costs. The transition of appropriate TIPS and NTTP courses to on-line instruction would realize significant cost savings; however, an additional FTE would be required to further this purpose.

WESTERN REGION Workload and Workforce Assessment

A. Name of Office	B. Program Area (Responsibility)	C. Number of Activities per year	D. Total FTE Needed to Perform Activity	E. Current FTE as 3/08/2015	F. Variance (Difference +/- between question D and E)	G. Impacts
1. WR	<p>Regulatory Oversight of State/Tribal Programs <i>All programs require oversight (develop performance agreements/workplans, data collection from multiple sources, oversight inspections, field visits, program evaluation yearly reports, program amendments, etc.). All programs require grants processing (programmatic review associated with awards, amendments, annual performance reports, annual financial status reports, closeouts, etc.) Currently the allocated</i></p>	7 State programs	4.9	4.5	-.4	(b) (5)

	<p><i>number of FTE is sufficient to complete the Program Area</i> <i>Responsibility, in future OSMRE WRO expects additional workload associated with Tribal Regulatory Program Oversight requiring estimated 1.0 FTE</i></p>					
2. WR	<p>AML Oversight of State/Tribal Programs <i>All programs require oversight (reporting, data collection from multiple sources, field visits, performance agreements, program evaluation yearly reports, program amendments, etc.)</i> <i>All programs require grants processing (programmatic review associated with awards, amendments, annual performance reports, annual financial status reports, closeouts, etc.)</i> <i>Assistance in developing, revising, and updating AML directives</i></p>	<p>7 State programs, 3 tribal programs</p>	3.6	3.2	-.4	(b) (5)
3. WR	Inspection and	48 complete	8.0	6.7	-1.3	(b) (5)

	<p>Enforcement <i>Regulatory program inspections, oversight inspections, bond release inspections, inspection reports, citizen complaints, etc. on Indian Lands and in Washington State. Direct Inspection roles will shift to Regulatory Oversight and Training inspection role as Navajo tribe assumes primacy. Direct Inspection still required for Hopi Tribal Lands</i></p>	<p>inspections 88 partial inspections Approx. 35 bond release inspections 60 oversight inspections</p>				(b) (5)
4. WR	<p>Indian Lands Permitting <i>Team leader/permit coordination, cost recovery, technical reviews, bond estimates, CHIA development, decision documents, public meetings, litigation support, cost recovery accounting, maintenance of the Mine Plan Reference Center.</i></p> <p><i>Once Navajo Nation assumes full primacy</i></p>	<p>average 80 permitting actions per year</p>	11.3	8.4	-2.9	

	<i>staff will be training and supporting Navajo permitting staff for 3 to 5 years to ensure the success of the Tribe. OSMRE will continue to perform permitting activity on the Hopi Reservation and permitting on the Crow Reservation.</i>					
5. WR	Federal Program Permitting <i>Team leader/permit coordination, technical reviews, decision documents, public meetings, litigation support, bond estimates, CHIA development, cost recovery accounting, maintenance of the Mine Plan Reference Center.</i>	average 20 permitting actions per year	2.2	1.6	-0.6	(b) (5)

6. WR	Federal Lands <i>Mine information review and processing, mining plan decision document preparation, NHPA Section 106 consultation, coordination with states and other Federal agencies</i>	Approx.. 10 mining plans per year	2.3	2	-0.3	(b) (5)
7. WR	Federal Reclamation Program <i>Work associated with reclamation of priority 1 and 2 abandoned coal mines in states with AML programs.</i>	Various	0.5	0.5	0	(b) (5)
8. WR	Electronic Records System development, maintenance and scanning	Entire Mine Plan Reference Center	1.5	1.5	0	(b) (5)
9. WR	Technical Assistance to States, other OSM offices and Federal agencies <i>Cultural Resource/Archeology, ESA Section 7 consultation, Prime farmland, hydrology, bonding.</i>	Various	1.7	1.3	-0.4	(b) (5)
10. WR	Rulemaking/Other tasks <i>Stream Protection</i>	Various	3.2	2.7	-0.5	(b) (5)

	<i>Rulemaking, Temporary Cessation of Operations, OSM NEPA Policy, Oversight policy review, ICRs, GPRA, TIPS/NTTP teaching, Blasting Team and Blaster certification.</i>					
11. WR	NEPA Compliance <i>Coordination of activities associated with fulfilling requirements of National Environmental Policy Act (NEPA) for Federal Lands, Federal Program Permitting and Indian Lands</i>	Various, but at a minimum for all mining plans and significant permitting actions	2.2	1.5	-0.7	(b) (5)
12. WR	FOIA Coordination <i>Coordination of activities associated with fulfilling requirements of Freedom of Information Act (FOIA)</i>	various	0.5	0.5	0	(b) (5)
13. WR	ESA Section 7 Consultation <i>Preparing and reviewing Biological Assessments, managing project proponent contractors, preparing BAS, administering OSM commitments associated with Section 7 consultations, managing</i>	Various, but at a minimum for all mining plans and significant permitting actions	0.5	0.5	0	(b) (5)

	<i>consultation process with the USFWS, assisting states and other OSM offices.</i>					
14. WR	Technical Support – Bond Release and TOJ Applications <i>Assisting OSM inspectors with the evaluation and processing of Phase I, II and II applications and Termination of Jurisdiction applications, providing technical evaluations in support of decisions made on pending applications.</i>	Approx. 4 bond release applications per year	0.8	0.6	-0.2	(b) (5)
15. WR	State Program Amendments (formal and informal) <i>Coordination, Formal Proposed Rule (FPR), technical findings, Final Rule Notice (FRN), filing, mailings..</i>	8 <i>5 formal amendments and 3 informal amendments</i>	2	1.6	-.4	(b) (5)
16. WR	Civil Penalty Assessments; Assessment Conferences & TDN Appeals	Various	.3	.3	0	(b) (5)
17. WR	Administration Budget/FBMS, property	various	7	6	-1	(b) (5)

	<i>procurement, records management, training coordinator, vehicle maintenance tracking/usage, time and attendance, mail, telecom, safety, travel, HR support, etc.</i>					(b) (5)
18. WR	Tribal Primacy <i>FTE will be applied to regulatory oversight and other duties once detail is completed.</i>	2 primacy applications, review of informal submissions	2	2	0	(b) (5)
19. WR	Program Management - Supervision	Various, management of staff members	10	9	-1.0	
20. WR	National TIPS Software and Hardware and Support by Subject Matter Experts <i>(covering over 24,000 user sessions annually in the 30 TIPS software applications in Hydrology, Geology, Engineering, CAD, GIS, Mobile Computing, and Remote Sensing, and associated user support; loan of over 40 technical devices (including</i>	Over 24,000 user software sessions and support	4.0	2.25	-1.75	

	<i>downhole and infrared cameras, GPS units, and gas meters) and associated user support.</i>					(b) (5)
21. WR	TIPS Software License Management (<i>30 Software applications</i>), WR TIPS software installation and testing support, and WR Training Center IT support, WR COOP and Emergency Preparedness	300 installs for usage and testing	2.0	2.0	0	

						(b) (5)
22. WR	National TIPS Training Program Administration and Support <i>Training 379 students in 24 instructor-led classes and 73 in six on-line classes</i>	452 students	5.0	3.2	-1.8	

						(b) (5)
23. WR	OSMRE National Technology Library Services	600 requests for information	1.0	1.0	0.0	
24. WR	WR Technology Transfer Support and Youth Initiative Support	5 Tech Transfer and youth events	0.1	0.1	0.0	
25. WR	WR Cooperative Agreement with Adams State University (ASU)	10 ASU/OSMRE employee activities	0.1	0.05	-0.05	

						(b) (5)
26. WR	<p>Western Region GIS / Geospatial products (mapping and data)</p> <p><i>The Western region GIS supports over two dozen different teams. GIS data is developed for editing and analysis using an ESRI Spatial Data Engine database.</i></p> <p><i>Support for mine teams for NEPA, permitting and inspection activities.</i></p>	150	6.0	1.2	-4.8	

						(b) (5)
27. WR	<p>National Remote Sensing Program <i>The Western Region acquires panchromatic and multi-spectral satellite imagery for all OSMRE regions through our contract with DigitalGlobe.</i></p> <p><i>Analysis conducted with the imagery include vegetation analysis over bond release areas, volumetric calculations with derived stereo models.</i></p> <p><i>The Western Region also completed the Remote Sensing Pilot Project</i></p>	600	4.0	1.0	-3.0	
28. WR	<p>Mission driven application development <i>The GIS Branch needs software development expertise to integrate</i></p>	Varies	1.0	0.0	-1.0	

	<p><i>existing data sources such as ARMS and eAMLIS into an enterprise GIS system.</i></p>					(b) (5)
29. WR	<p>GeoMine <i>The National GeoMine system is currently waiting for the DOI cloud and investment to take it beyond the pilot stage. The development under the Western Region GIS system has built on the GeoMine pilot project and is the foundation for the eventual rollout of GeoMine.</i></p> <p><i>The program will use web map applications to view nationwide datasets such as permit boundaries, AML projects</i></p>	200	5.0	0.5	-4.5	

						(b) (5)
30. WR	<p>ESRI software administration and TIPS training</p> <p><i>The GIS Branch handles the national program to support SMCRA states ESRI GIS licensing which includes license servers, version control and technical support.</i></p> <p><i>The GIS Branch also supports the TIPS program by training Intro to GIS, Advanced GIS, Mobile Computing and Imagery Processing.</i></p>	600	1.8	1.25	-0.55	(b) (5)
31. WR	<p>Grants/Agreements</p> <p><i>New grants each year for AML/REG Monitoring Reports and modifications, budget tracking and closeout reviews, milestone reporting</i></p>	200+	3.0	2.25	-0.75	(b) (5)

						(b) (5)
32. WR	Property and building maintenance and administration <i>National distribution and tracking of new and innovative technologies; fleet management and purchase; capitalized property for the WR, yearly inventory. Space allocation and phone services</i>	1100+	1.5	1.0	-0.5	(b) (5)
33. WR	National & WR Web Services <i>National SharePoint administration (Internal/External), OSMRE Intranet, WR-TIPS-SAIGE-ETC Websites</i> <i>3 sites maintained, 1 site development</i>	3 sites-maintained, 1 site developed, and 2 SharePoint implementations maintained. Over 300+ maintenance actions per year	3.0	1.9	-1.1	(b) (5)
34. WR	TMD Budget/WR & TMD and TIPS Procurements & software distribution <i>Purchasing and tracking of budget; funding and</i>	1,000+	3.0	1.7	-1.3	

	procurement of national software and items needed for daily operations to include IT refresh, supplies and equipment					(b) (5)
35. WR	National & WR Video Production	12	1.0	1.1	0.1	(b) (5)
36. WR	WR & National IT Support <i>IT Security, Incident Response, Tier 2/3 support</i>	500+	2.0	0.1	-1.9	(b) (5)

						(b) (5)
WR. 37	Budget, Personnel and Program Management. Responsible for preparing and managing the regional budget, coordinating personnel recruitment and performing programmatic functions pursuant to department and bureau compliance requirements.	Numerous	1	1	0	(b) (5)
WR. 38	Equal Employment	Numerous	1	1	0	(b) (5)

	Opportunity EEO provides advice and assistance to managers, EEO counselors and employees in the Western Region on affirmative action					(b) (5)
TOTAL			110	77	-33	

(Note: Add additional cells if needed.)

**Biological Assessment
for the
Office of Surface Mining Reclamation and Enforcement
for
Federally Listed Threatened and Endangered Species
Species Proposed for Federal Listing**

Prepared by:

U.S. Office of Surface Mining
Washington, D.C.

December 16, 2016



Table of Contents

Purpose of the Biological Assessment	5
Description of the Action	6
Background on SMCRA, OSMRE's Mission, State Regulatory Authorities	6
Consultation History	8
Area of Analysis	9
SMCRA Regulations Affecting Threatened and Endangered Species	11
The Mining Process	13
Potential Effects to Listed Species from Mining Under the Current Regulations.....	20
Exploration.....	24
Permitting.....	24
Erosion and Sedimentation Controls	24
Clearing and Grubbing	25
Blasting	25
Excavation of Overburden and Coal	25
Surface Mining	25
Underground Mining.....	26
Backfilling and Grading, Excess Spoil, and Coal Mine Waste.....	27
Soils and Revegetation	27
Coal Haulage	27
Coal Processing	27
Clean Water Act Wetland and Stream Mitigation.....	28
Coal Combustion Residue Placement.....	28
Bond Release.....	30
The Stream Protection Rule.....	30
Endangered Species Requirements.....	31
Protection of the Hydrologic Balance	32
Definition of Material Damage to the Hydrologic Balance Outside the Permit Area	32
Premining Data Collection and Analysis	33
Monitoring During Mining and Reclamation	34
Activities in or near Streams	35
Mining Through Streams.....	35
Disposal of Excess Spoil and Coal Mine Waste.....	37
Mountaintop Removal and Approximate Original Contour Exceptions	37

Mountaintop Removal.....	37
Steep-Slope Approximate Original Contour Variances	38
Soils and Revegetation	39
Clean Water Act Wetland and Stream Mitigation.....	40
Fish and Wildlife Protection and Enhancement	40
Bonding and Financial Assurance	40
Potential effects to listed species from mining under the Stream Protection Rule	41
Exploration.....	41
Permitting.....	41
Erosion and Sedimentation Controls	43
Clearing and Grubbing	43
Blasting	43
Excavation of Overburden and Coal	44
Surface Mining	44
Underground Mining.....	45
Backfilling, Grading, Excess Spoil and Coal Mine Waste	46
Soils and Revegetation	47
Coal Haulage	47
Coal Processing	48
Clean Water Act Wetland and Stream Mitigation.....	48
Coal Combustion Residue Placement.....	48
Bond Release.....	48
Species Potentially Affected by the Action.....	48
Critical Habitat	49
Birds.....	50
Cuckoos.....	50
Raptors	53
Woodpeckers	58
Passerines (Perching birds).....	60
Shorebirds.....	64
Grouse	68
Reptiles	71
Snakes	71
Turtles	75

Amphibians	79
Salamanders.....	79
Frogs.....	82
Insects	84
Beetles	84
Butterflies	86
Fishes	89
Sturgeon	90
Madtom.....	93
Darters	96
Minnows.....	100
Suckers	106
Trout.....	110
Crustaceans	113
Illinois cave amphipod and Kentucky cave shrimp	113
Big Sandy and Guyandotte River crayfishes.....	115
Mollusks.....	118
Mammals.....	128
Bats.....	128
Other mammals.....	131
Plants.....	139
Xeric Species	140
Mesic Species	145
Hydric Species	150
Uncertainty Associated with the Effects Determinations.....	155
Climate Change.....	156
Conclusions	157
Tables	160
Table 1. Species Potentially Affected By These Actions.	161
Table 2. Species Range and Critical Habitat Overlap with Mineable Coal.	169
Table 3. Species On Which the Action Will Have No Effect.....	178
Literature cited.....	180
Appendix A: Existing SMCRA requirements for listed species protection.....	196

Literature cited

American Coal Ash Association. 2014. Coal combustion product production and use survey for 2012, accessed July 31, 2014, at <http://www.acaa-usa.org/Publications/Production-Use-Reports>

Beaver, F.W., G.H. Groenewold, O.E. Manz, and D.J. Hassett. 1987. The effects of fly ash and flue-gas desulfurization wastes on groundwater quality in a reclaimed lignite strip mine disposal site, v. 1, final report. North Dakota Mining and Mineral Resources Research Institute, Grand Forks, North Dakota.

Black, T.R., B.K. Jones, and H.T. Mattingly. 2013. Development and validation of habitat models for the threatened blackside dace, *Chrosomus cumberlandensis*, at two spatial scales. *Southeastern Naturalist* 12:27–48.

Boschung, H.T., Jr., and R.L. Mayden. 2004. Fishes of Alabama. Smithsonian Institution. 736 p.

Carman, S.M. 2004. Zuni bluehead sucker (*Catastomus discobolus yarrowi*) Recovery Plan. New Mexico Department of Game and Fish, Conservation Services Division, Santa Fe, NM. 40 pp.

Chambers, D.B. and T. Messinger. 2001. Benthic invertebrate communities and their responses to selected environmental factors in the Kanawha River basin, West Virginia, Virginia, and North Carolina. Water-Resources Investigations Report 01-4021. US Geological Survey, Charleston, West Virginia. 52 pp.

Childers, T. 2009. Gunnison sage-grouse status review information request response for Black Canyon of the Gunnison National Park and Curecanti National Recreation Area. 33 pp.

Colorado Division of Wildlife (CDOW). 2009. Spreadsheet summarizing land ownership by Gunnison sage-grouse population and status. Submittal to the USFWS. 5 pp.

Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. Stiver. 2004. Conservation assessment of greater sage-grouse and sagebrush habitats. Western Association of Fish and Wildlife Agencies. www.wafwa.org

Daniel, W.M., D.M. Infante, R.M. Hughes, Y. Tsang, P.C. Esselman, D. Wieferich, K. Herreman, A.R. Cooper, L. Wang, and W.W. Taylor. 2015. Characterizing coal and mineral mines as a regional source of stress to stream fish assemblages. *Ecological Indicators* 50:50-61.

Diamond, J.M., D.W. Bressler, and V.B. Serveiss, 2002, Assessing the relationships between human land uses and the decline of native mussels, fish, and macroinvertebrates in the Clinch and Powell River watershed, USA. *Environmental Toxicology and Chemistry* (21)6:1147-1155.

Eberle, M. and A.C. Razem. 1985. Effects of coal mining and reclamation on ground water in small watersheds in the Allegheny Plateau, Ohio. U.S. Geological Survey, Water Resources Investigations Report 85-4205.

Etnier, D. A. and R. E. Jenkins. 1980. *Noturus stanauli*, a new madtom catfish from the Clinch and Duck rivers, Tennessee. Bulletin of the Alabama Museum of Natural History 5:17-22.

Evans, D.E., C.E. Zipper, P.F. Donovan, and W.L. Daniels. 2014. Long-term trends of specific conductance in waters discharged by coal-mine valley fills in central Appalachia, USA. Journal of the American Water Resources Association (JAWRA) 1-12 10.1111/jawr.12198

Farmer, A.M. 1993. The effects of dust on vegetation-a review. Environmental Pollution 79:63-75.

Faisal, M. and D. Garling. 2004. What is Whirling Disease? North Central Regional Aquaculture Center. Available at <http://www.ncrac.org/NR/rdonlyres/3CBECF1E-2AE0-4661-9C08-29A0A15DE403/26267/Whirling2.pdf>. (Accessed: November 10, 2015).

Fulk, F., B. Autrey, J. Hutchens, J. Gerritsen, J. Burton, C. Cresswell, and B. Jessup. 2003. Ecological assessment of streams in the coal mining region of West Virginia using data collected by US EPA and environmental consulting firms. EPA 903-R-00-0013B. National Exposure Research Laboratory, US Environmental Protection Agency, Cincinnati, Ohio.

Froese, R. and D. Pauly. Editors. 2015. FishBase. World Wide Web electronic publication. www.fishbase.org, version (08/2015).

Gunnison Sage-grouse Rangewide Steering Committee (GSRSC). 2005. Gunnison sage-grouse rangewide conservation plan. Colorado Division of Wildlife, Denver, Colorado, USA.

Hamilton, D.A. and J.L. Wilson. 1977. A generic study of strip mining impacts on groundwater resources. Energy Laboratory Report No. MIT-EL-77-017. Massachusetts Institute of Technology.

Hart, B. 2004. A Survey for the Mitchell's Satyr (*Neonympha mitchellii* French) in the National Forests in Alabama. Final Report Prepared for the U.S. Fish and Wildlife Service, Daphne, AL. Report prepared by the Alabama Natural Heritage Program, The Nature Conservancy, Montgomery, AL. 222 pp.

Hartman, K.J., M.D. Kaller, J.W. Howell, and J.A. Sweka, 2005. How much do valley fills influence headwater streams? *Hydrobiologia* 532:91-102.

Hitt, N.P. and D.B. Chambers. 2014. Temporal changes in taxonomic and functional diversity of fish assemblages downstream from mountaintop mining. *Freshwater Science* 33(3):915-926.

Indiana Division of Natural Resources. n.d. Citizen's guide to coal mine blasting in Indiana.

Intergovernmental Panel on Climate Change. 2013. Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)].

Jacquemin, S.J. and J.C Doll. 2015. Macroecology of North American suckers (Catostomidae): tests of Bergmann's and Rapoport's rules. *Ecology and Evolution* 5(18): 3895-3904.

Jelks, H.L., S.J. Walsh, N. M. Burkhead, S. Contreras-Balderas, E. Diaz-Pardo, D. A. Hendrickson, J. Lyons, N.E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J.J. Schmitter-Soto, E.B. Taylor and M. L. Warren Jr. (2008): Conservation status of imperiled North American freshwater and diadromous fishes. *Fisheries* 33:372-407.

Johnston, C.E. and L.M. Page. 1992. The evolution of complex reproductive strategies in North American minnows (Cyprinidae) in: *Systematics, Historical Ecology, and North American Freshwater Fishes* (pp. 600-621). Palo Alto, California: Stanford University Press.

Johnson, M.J., J.A. Holmes, C. Calvo, I. Samuels, S. Krantz, and M.K. Sogge, 2007. Yellow-billed cuckoo distribution, abundance, and habitat use along the lower Colorado and tributaries, 2006 annual report. U.S. Geological Survey Open-File Report 2007-1097 . Available online at <http://pubs.usgs.gov/of/2007/1097>.

Johnson, M.S., W.F. Henley, R. J. Neves, J.W. Jones, R.S. Butler & S. D. Hanlon. 2012. Freshwater mussels of the Powell River, Virginia and Tennessee: abundance and distribution in a biodiversity hotspot. *Walkerana* (15)2:83-98.

Johnson, P. D., A. E. Bogan, K. M. Brown, N. M. Burkhead, J. R. Cordeiro, J. T. Garner, P. D. Hartfield, D. A. W. Lepitzki, G. L. Mackie, E. Pip, T. A. Tarpley, J. S. Tiemann, N. V. Whelan, and E. E. Strong. 2013. Conservation status of freshwater gastropods of Canada and the United States. *Fisheries* 38(6):247-282.

Johnson, P.D. 2009. Freshwater snail biodiversity and conservation. Virginia Cooperative Extension. Publication 420-530

Jones, J., S. Ahlstedt, B. Ostby, B. Beaty, M. Pinder, N. Eckert, R. Butler, D. Hubbs, C. Walker, S. Hanlon, J. Schmerfeld, and R. Neves. 2014. Clinch River freshwater mussels upstream of Norris Reservoir, Tennessee and Virginia: A quantitative assessment from 2004 to 2009. *Journal of the American Water Resources Association (JAWRA)* 1-17.

Karl, T.R., J.M. Melillo, and T.C. Peterson (eds). 2009. Global climate change impacts in the United States. Cambridge University Press.

Kitchel, H.E., J.C. Widlak, and R.J. Neves. 1981. The impact of coal-mining waste on endangered mussel populations in the Powell River, Lee County, Virginia. Report to Virginia State Water Control Board, Richmond. 26 pp.

Lee, D.S., C.R. Gilbert, C.H. Hocutt, R.E. Jenkins, D.E. McAllister, and J.R. Stauffer. Atlas of North American Fishes. Raleigh, NC: North Carolina State Museum of Natural History, 1994.

Lemly, A.D. 1993. Teratogenic effects of selenium in natural populations of freshwater fish. *Ecotoxicology and Environmental Safety* 26(2):181-204.

Lindberg, T.T., E.S. Bernhardt, R. Bier, A. Helton, R. Merola, A. Vengosh, R.T. Di Giulio. 2011. Cumulative impacts of mountaintop mining on an Appalachian watershed. Proceedings of the National Academy of Sciences 108: 20929-20934, 20931. Available at <http://www.pnas.org/cgi/doi/10.1073/pnas.1112381108>

Marsh, P.C., Pacey, C.A. and Kesner, B.R. 2003. Decline of the razorback sucker in Lake Mohave, Colorado River, Arizona and Nevada. Transactions of the American Fisheries Society 132: 1251-1256.

McCann, M.T. & R.J. Neves. 1992. Toxicity of coal-related contaminants to early life stages of freshwater mussels in the Powell River, Virginia. Unpublished Report, U.S. Fish and Wildlife ServiceNatureServe. 2014.

Merricks, T.C., D.S. Cherry, C.E. Zipper, R. Currie, and T. Valenti, 2007. Coal-mine hollow fill and settling pond influences on headwater streams in southern West Virginia, USA. Environmental Monitoring and Assessment 129:359-37

Michael, P.R., M.J. Superfesky, & L.J. Uranowski. (2010). Challenges to applying geomorphic and stream reclamation methodologies to mountaintop mining and excess spoil fill construction in steep-slope topography (e.g. Central Appalachia). Presented at 2010 National Meeting of the American Society of Mining and Reclamation. Pittsburgh, PA. U.S. Department of the Interior.

National Research Council. 1984. Highwall elimination and return to approximate original contour as required in the Surface Mining Control and Reclamation Act of 1977 : a report The National Academies Press, Washington, D.C., 200 p.

_____. 2006. Managing coal combustion residues in mines. The National Academies Press, Washington, D.C., 256 p.

_____. 1990. Surface coal mining effects on ground water recharge. National Academy Press. Washington, D.C. 159 p.

NatureServe. 2013. *Xyrauchen texanus*. The IUCN Red List of Threatened Species 2013: e.T23162A19032625. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T23162A19032625.en> . Downloaded on **10 November 2015**.

NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available at <http://explorer.natureserve.org>. (Accessed: November, 2015).

Palmer, I.S. 1986. A study of the effect of fly ash burial on the selenium content of vegetation at the San Juan Mine and Navajo Mine at Farmington, New Mexico. Report to Office of Surface Mining Reclamation and Enforcement and the San Juan and Navajo Mine companies.

Parmalee, P.W. and A.E. Bogan, 1998. The freshwater mussels of Tennessee. University of Tennessee Press, Knoxville.

Patterson, R.L. 1952. The sage grouse in Wyoming. Wyoming Game and Fish Commission, Sage Books Inc., Denver, CO. 344 pp.

Pauley, T. K. 2008. Natural history and status of the Cheat Mountain salamander, *Plethodon nettingi*. Unpublished Report to the U.S. Fish and Wildlife Service. West Virginia Field Office. 8pp

Petty, T., K. Fulton, M. Strager, G. Merovich, J. Stiles, and P. Ziemkiewicz. 2010. Landscape indicators and thresholds of stream ecological impairment in an intensively mined Appalachian watershed. *Journal of the North American Benthological Society* 29(4): 1292–1309.

Pond, G.J. 2004. Effects of surface mining and residential land use on headwater stream biotic integrity in the eastern Kentucky coalfield region. Kentucky Department for Environmental Protection, Division of Water, Frankfort, Kentucky. 48 pp.

Pond, G.J., M.E. Passmore, F.A. Borsuk, L. Reynolds, and C.J. Rose. 2008. Downstream effects of mountaintop coal mining: Comparing biological conditions using family- and genus level macroinvertebrate bioassessment tools. *Journal of the North American Benthological Society* 27:717-737.

Pond, G.J., M.E. Passmore, N.D. Pointon, J.K. Felbinger, C.A. Walker, K.J.G. Krock, G.B. Fulton, and W.L. Nash. 2014. Long-term impacts on macroinvertebrates downstream of reclaimed mountaintop mining valley fills in Central Appalachia. *Environmental Management* 54: 919-933.

Price, J.E., C.E. Zipper, J.W. Jones, and C. Franck. 2011. Water and sediment quality in the Clinch and Powell Rivers of Virginia and Tennessee, 1964–2010. Virginia Polytechnical Institute and State University, Blacksburg. 146 pp.

Price, J.E., C.E. Zipper, J.W. Jones, and C. T. Franck. 2014. Water and sediment quality in the Clinch River, Virginia and Tennessee, USA, over 5 decades. *Journal of the American Water Resources Association (JAWRA)* 1-22.

Riley, C.V. 1960. The ecology of water areas associated with coal strip-mined lands in Ohio. *Ohio Journal of Science* 60(2):106-121.

Rosen, P. C. and C. R. Schwalbe. 1988. Status of the Mexican and narrow-headed garter snakes (*Thamnophis eques megalops* and *Thamnophis rufipunctatus rufipunctatus*) in Arizona. Unpubl. report from Arizona Game and Fish Dept. (Phoenix, Arizona) to U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

Sharifi, M.R., A.C. Gibson, and P.W. Rundel. 1997. Surface dust impacts on gas exchange in Mojave desert shrubs. *The Journal of Applied Ecology* 34:837-846.

Shiels, A.S. 2015. Pennsylvania Fish and Boat Commission, Nongame and Endangered Species Unit, *Bog Turtles Slipping Away*, available at: www.fish.state.pa.us/education/catalog/ab/bogturtl.htm, accessed July 2015

Shuangying Y, R.S. Halbrook, D.W. Sparling, and R. Colombo (2011). Metal accumulation and evaluation of effects in a freshwater turtle. *Ecotoxicology* 20:1801-1812

Soucek, D. J., D. S. Cherry, and C. E. Zipper. 2003. Impacts of mine drainage and other

nonpoint source pollutants on aquatic biota in the upper Powell River System, Virginia. *Human and Ecological Risk Assessment* 9(4):1059-1073

Starnes, L.B. and W.C. Starnes. 1981. Biology of the blackside dace *Phoxinus cumberlandensis*. *American Midland Naturalist* 106:360-372.

Stauffer, J.R., and C.P. Ferreri. 2002. Characterization of stream fish assemblages in selected regions of mountain top removal/valley fill coal mining. Draft programmatic environmental impact statement on mountaintop mining/valley fills in Appalachia. EPA 903-R-00-0013B. US Environmental Protection Agency, Philadelphia, Pennsylvania.

Strayer, J.A., A. Downing, W.R. Haag, T.L. King, J.B. Layzer, T.J. Newton, and S.J. Nichols. 2004. Changing perspectives on pearly mussels, North America's most imperiled animals. *BioScience* 54:429-439.

Szymanski, J., C. Pollack, L. Ragan, M. Redmer, L. Clemency, K. Voorhies, and J. Jonathan. 2015. Species status assessment for the eastern massasauga rattlesnake (*Sistrurus catenatus*). U.S. Fish and Wildlife Service.

Thoma, R.F. 2009. The conservation status of *Cambarus (Puncticambarus) veteranus*, Big Sandy crayfish; *Cambarus (Jugicambarus) jezerinaci*, spiny scale crayfish; and *Cambarus (Cambarus) sp. A*, Blue Ridge crayfish. MBI Technical Report MBI/2009-6-1.

Thoma, R.F. 2010. The conservation status of *Cambarus (Puncticambarus) veteranus*, Big Sandy crayfish and *Cambarus (Jugicambarus) parvoculus*, mountain midget crayfish in Kentucky. MBI Technical Report MBI/2010.

Thoma, R.F., Z.J. Loughman, and J.W. Fetzner. 2014. *Cambarus (Puncticambarus) callainus*, a new species of crayfish (Decapoda: Cambaridae) from the Big Sandy River basin in Kentucky, Virginia, and West Virginia, USA. *Zootaxa*

U.S. EPA. The effects of mountaintop mines and valley fills on aquatic ecosystems of the Central Appalachian coalfields (2011 Final). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/138F, 2011.

U.S. Fish and Wildlife Service. 1976. Determination of critical habitat for American crocodile, California condor, Indiana bat, and Florida manatee. *Federal Register* Vol. 41, No. 187. pp. 41914-41916.

U.S. Fish and Wildlife Service. 1977. Final rule: correction and augmentation of published rulemaking. *Federal Register* Vol. 42, No. 184. pp. 47840-47845.

U.S. Fish and Wildlife Service. 1979. Listing of Virginia and Ozark big-eared bats as endangered species, and critical habitat determination. *Federal Register* Vol. 44, No. 232. pp. 69206-69208.

U.S. Fish and Wildlife Service. 1983a. Determination of endangered status and designation of critical habitat for the Kentucky cave shrimp. *Federal Register* Vol. 48, No. 198. pp. 46337-48342.

U.S. Fish and Wildlife Service. 1983b. Recovery plan for the spotfin chub (*Erimonax monachus*). Atlanta, Georgia. 46 pp.

U.S. Fish and Wildlife Service. 1984. Mesa Verde Cactus (*Sclerocactus mesae-verdae*) recovery plan. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico. 63 pp.

U.S. Fish and Wildlife Service. 1985. Determination of *Carex specuicola* to be a threatened species with critical habitat. Federal Register Vol. 50, No. 89. pp. 19370-19374.

U.S. Fish and Wildlife Service. 1987. Navajo sedge recovery plan. U.S. Fish and Wildlife Service. Albuquerque, New Mexico. 39 pp.

U.S. Fish and Wildlife Service. 1988a. Kentucky cave shrimp recovery plan. U.S. Fish and Wildlife Service, Atlanta , Georgia. 47 pp.

U.S. Fish and Wildlife Service. 1988b. Great Lakes and Northern Great Plains piping plover recovery plan. U.S. Fish and Wildlife Service Newton Corner, Massachusetts.

U.S. Fish and Wildlife Service. 1989a. Determination of threatened status for the Cheat Mountain salamander and endangered status for the Shenandoah salamander. Federal Register Vol. 54, No. 159. pp. 34464-34468.

U.S. Fish and Wildlife Service. 1989b. Determination of endangered species status for the American burying beetle. Federal Register Vol. 54, No. 133. pp. 29652-29655.

U.S. Fish and Wildlife Service. 1990a. Threatened status for *Sagittaria secundifolia* (Kral's water plantain). Federal Register Vol. 55, No.72. pp. 13907-13911.

U.S. Fish and Wildlife Service. 1990b. Harperella (*Ptilimnium nodosum*) recovery plan. Newton Corner, Massachusetts. 60 pp.

U.S. Fish and Wildlife Service. 1990c. Recovery plan for the interior population of the least tern (*Sterna antillarum*).

U.S. Fish and Wildlife Service. 1991a. Emergency rule to list the Mitchell's saytr butterfly as endangered. Federal Register Vol. 56, No. 122. pp. 28825-28828.

U.S. Fish and Wildlife Service. 1991b. *Conradina verticillata* (Cumberland rosemary) determined to be threatened. Federal Register Vol. 56, No. 230. pp. 60937-60941.

U.S. Fish and Wildlife Service. 1992. Determination of endangered species status for Mitchell's saytr butterfly. Federal Register Vol. 57, No. 98. pp. 21564-21569.

U.S. Fish and Wildlife Service. 1994. Determination of critical habitat for the Colorado River endangered fishes: razorback sucker, Colorado squawfish, humpback chub, and bonytail chub. Federal Register Vol. 59, No. 54. pp. 13374-13400.

U.S. Fish and Wildlife Service. 1997. Recovery plan for the palezone shiner (*Notropis albizonatus*). Atlanta, Georgia. 27 pp.

U.S. Fish and Wildlife Service. 1998a. Greenback cutthroat recovery plan. U.S. Fish and Wildlife Service, Denver, Colorado.

U.S. Fish and Wildlife Service. 2002a. Illinois cave amphipod (*Gammarus acherondytes*) recovery plan. U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota.

U.S. Fish and Wildlife Service. 2002b. Final recovery plan southwestern willow flycatcher (*Empidonax traillii extimus*) U.S. Fish and Wildlife Service, Albuquerque, New Mexico

U.S. Fish and Wildlife Service. 2002c. Razorback sucker (*Xyrauchen texanus*) recovery goals: amendment and supplement to the Razorback Sucker Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

U.S. Fish and Wildlife Service. 2002d. Designation of critical habitat for the northern Great Plains breeding population of the piping plover. Federal Register Vol. 67. No. 176. pp. 57638-57717.

U.S. Fish and Wildlife Service. 2003a. Recovery plan for the red-cockaded woodpecker (*Picoides borealis*): second revision. U.S. Fish and Wildlife Service, Atlanta, Georgia.

U.S. Fish and Wildlife Service. 2003b. Designation of critical habitat for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*). Federal Register Vol. 68, No. 53. pp. 13370-13495.

U.S. Fish and Wildlife Service. 2003c. Gila trout recovery plan (third revision). Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2004a. Recovery plan for Cumberland elktoe (*Alasmidonta atropurpurea*), oyster mussel (*Epioblasma capsaeformis*), Cumberlandian Combshell (*Epioblasma brevidens*), purple bean (*Villosa perpurpurea*), and rough rabbitsfoot (*Quadrula cylindrica strigillata*). Atlanta, Georgia. 174 pp.

U.S. Fish and Wildlife Service. 2004b. Designation of critical habitat for five endangered mussels in the Tennessee and Cumberland River basins. Federal Register Vol. 69, No. 168 pp. 53136-53180.

U.S. Fish and Wildlife Service. 2004c. Designation of critical habitat for three threatened mussels and eight endangered mussels in the Mobile River Basin. Federal Register Vol. 69, No. 126 pp. 40084-40171.

U.S. Fish and Wildlife Service. 2004d. Final designation of critical habitat for the Mexican spotted owl; final rule. Federal Register Vol. 69, No. 168 pp. 53182-53230

U.S. Fish and Wildlife Service. 2005. Recovery plan for 6 Mobile River Basin aquatic snails. U.S. Fish and Wildlife Service. Jackson, Mississippi.

U.S. Fish and Wildlife Service. 2006a. Six Mobile River Basin aquatic snails 5-year review. U.S. Fish and Wildlife Service. Jackson, Mississippi.

U.S. Fish and Wildlife Service. 2006b. Red cockaded woodpecker (*Picoides borealis*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service. Clemson, South Carolina.

U.S. Fish and Wildlife Service. 2007a. Flat-spined three-toothed land snail (*Triodopsis platysayoides*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, West Virginia Field Office, Elkins, West Virginia.

U.S. Fish and Wildlife Service. 2007b. Chiricahua leopard frog (*Lithobates chiricahuensis*) recovery plan. Southwest Region U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2008a. Virginia big-eared bat (*Corynorhinus townsendii virginianus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service West Virginia Field Office, Elkins, West Virginia.

U.S. Fish and Wildlife Service. 2008b. American burying beetle (*Nicrophorus americanus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service New England Field Office, Concord, New Hampshire.

U.S. Fish and Wildlife Service. 2008c. 5-Year Review for the Wright fishhook cactus. U.S. Fish and Wildlife Service, Utah Field Office. 25 pp.

U.S. Fish and Wildlife Service. 2008d. Designation of critical habitat for *Helianthus paradoxus* (Pecos Sunflower); Final Rule. Federal Register Vol. 73, No. 63, pp. 17762-17807.

U.S. Fish and Wildlife Service. 2009a. Gray bat (*Myotis grisescens*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service Midwest Region, Columbia Missouri Ecological Services Field Office. Columbia, Missouri.

U.S. Fish and Wildlife Service. 2009b. Cheat Mountain salamander (*Plethodon nettingi*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service West Virginia Field Office, Elkins, West Virginia.

U.S. Fish and Wildlife Service. 2009c. Gulf sturgeon (*Acipenser oxyrinchus desotoi*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Panama City Ecological Services Field Office, Panama City, Florida

U.S. Fish and Wildlife Service. 2009d. Designation of critical habitat for Alabama sturgeon (*Scaphirhynchus suttkusi*). Federal Register Vol. 74, No. 104. pp. 26488-26510

U.S. Fish and Wildlife Service. 2009e. 5-year review for the gentian pinkroot (*Spigelia gentianoides*). U.S. Fish and Wildlife Service, Southeast Region, Panama City, Florida. 18 pp.

U.S. Fish and Wildlife Service. 2009f. 5-year review for the *Geocarpon minimum*. U.S. Fish and Wildlife Service, Southeast Region, Arkansas Ecological Services Field Office, Conway, Arkansas. 23 pp.

U.S. Fish and Wildlife Service. 2009g. Apache trout recovery plan, second revision. Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2009f. Piping plover 5 year review: summary and evaluation. U.S. Fish and Wildlife Service, Hadley Massachusetts and East Lansing, Michigan.

U.S. Fish and Wildlife Service. 2010a. Kentucky cave shrimp (*Palamoenias ganteri*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service. Kentucky Ecological Services Field Office, Frankfort, Kentucky.

U.S. Fish and Wildlife Service. 2010b. Revised critical habitat for the Preble's meadow jumping mouse in Colorado. Federal Register Vol. 75, No. 240. pp. 78430-78483.

U.S. Fish and Wildlife Service. 2010c. Alabama sturgeon (*Scaphirhynchus sutkussi*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Alabama Ecological Services Field Office, Daphne, Alabama.

U.S. Fish and Wildlife Service. 2010d. Yellowfin madtom (*Noturus flavipinnis*) Smoky madtom (*Noturus baileyi*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Tennessee Ecological Services Field Office, Southeast Region, Cookeville, Tennessee

U.S. Fish and Wildlife Service. 2010e. Protecting and restoring the Powell River watershed, Virginia Natural Resource Damage Assessment and Restoration Program (Fact Sheet). U.S. Fish and Wildlife Service, Virginia Field Office, Gloucester, Virginia

U.S. Fish and Wildlife Service. 2010f. 5-year review for the eastern prairie fringed orchid (*Platanthera leucophaea*). U.S. Fish and Wildlife Service, Chicago Illinois Field Office, Barrington, Illinois. 32 pp.

U.S. Fish and Wildlife Service. 2011a. 90 day finding on a petition to list the eastern small-footed bat and the northern long-eared bat as threatened or endangered. Federal Register Vol. 76, No. 125. pp. 38095-38106.

U.S. Fish and Wildlife Service. 2011b. Illinois cave amphipod *Gammarus acherondytes* 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Midwest Region, Rock Island Ecological Services Field Office, Moline Illinois.

U.S. Fish and Wildlife Service. 2011c. Chiricahua leopard frog (*Lithobates chiricahuensis*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service Arizona Ecological Services Office, Phoenix, Arizona.

U.S. Fish and Wildlife Service. 2011d. 5-year review for the Wright fishhook cactus. U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office. 49 pp.

U.S. Fish and Wildlife Service. 2011e. 5-year review for the North Park phacelia. U.S. Fish and Wildlife Service, Western Colorado Field Office. 25 pp.

U.S. Fish and Wildlife Service. 2011f. Species assessment and listing priority assignment form for the yellow-billed cuckoo.

U.S. Fish and Wildlife Service. 2011g. Cumberland rosemary (*Conradina verticillata*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Tennessee Ecological Services Field Office, Cookeville, Tennessee. 14 pp.

U.S. Fish and Wildlife Service. 2011e. Endangered status for the Cumberland darter, rush darter, yellowcheek darter, Chucky madtom, and laurel dace. Federal Register Vol. 76, No. 153. pp. 48722-48740.

U.S. Fish and Wildlife Service. 2012a. Utah prairie dog (*Cynomys parvidens*) revised recovery plan. U.S. Fish and Wildlife Service Mountain Prairie Region, Denver, Colorado. 169 pp.

U.S. Fish and Wildlife Service. 2012b. Proposed endangered status for the Neosho mucket, threatened status for the rabbitsfoot, and designation of critical habitat for both species; proposed rule. Federal Register Vol. 77, No. 200. Pp 63440-63536

U.S. Fish and Wildlife Service. 2012c. Finerayed pigtoe *Fusconaia cuneolus* 5-year review: summary and evaluation. U.S. Fish and Wildlife Service. Southeast Region Asheville Ecological Services Field Office Asheville, North Carolina.

U.S. Fish and Wildlife Service. 2012d. Revising the special rule for the Utah prairie dog; final rule Federal Register Vol. 77, No. 149 pp. 46158-46183.

U.S. Fish and Wildlife Service. 2012e. U.S. Fish and Wildlife Service. Recovery plan for the Mexican spotted owl (*Strix occidentalis lucida*), first revision. Albuquerque, New Mexico. 414 pp.

U.S. Fish and Wildlife Service. 2012g. Designation of critical habitat for *Ipomopsis polyantha* (Pagosa skyrocket), *Penstemon debilis* (Parachute beardtongue), and *Phacelia submutica* (DeBeque phacelia); Final rule. Federal Register Vol. 77, No. 156. pp. 48368-48418.

U.S. Fish and Wildlife Service. 2012h. Designation of critical habitat for the Cumberland darter, rush darter, yellowcheek darter, Chucky madtom, and laurel dace. Federal Register Vol. 77, No. 200. pp. 63604-63668.

U.S. Fish and Wildlife Service. 2012i. Designation of critical habitat for the Zuni bluehead sucker (proposed rule). Federal Register Vol. 80, No. 71. pp. 19941-19953.

U.S. Fish and Wildlife Service. 2013a. Recovery plan for the black-footed ferret (*Mustela nigripes*) U.S. Fish and Wildlife Service, Denver, Colorado. 157 pp.

U.S. Fish and Wildlife Service. 2013b. Endangered status for the Neosho mucket and threatened status for the rabbitsfoot. Federal Register Vol. 78. No. 180, pp. 57076-57097

U.S. Fish and Wildlife Service. 2013c. 2013 rangewide population estimate for the Indiana bat (*Myotis sodalis*) by USFWS region. U.S. Fish and Wildlife Service Bloomington, Indiana Ecological Services Field Office.

U.S. Fish and Wildlife Service. 2013d. Listing the northern long-eared bat as an endangered species. Federal Register Vol. 78, No. 231 pp. 72058-72059.

U.S. Fish and Wildlife Service. 2013e. Designation of critical habitat for the fluted kidneyshell and slabside pearlymussel. Federal Register Vol. 78, No. 187. pp. 59556-59620

U.S. Fish and Wildlife Service. 2013f. Tan riffleshell *Epioblasma florentina walkeri* 5-year review: summary and evaluation. U.S. Fish and Wildlife Service. Southeast Region Asheville Ecological Services Field Office Asheville, North Carolina.

U.S. Fish and Wildlife Service. 2013g. California condor (*Gymnogyps californianus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Pacific Southwest Region.

U.S. Fish and Wildlife Service. 2013h. Mexican spotted owl (*Strix occidentalis lucida*) 5-year review short form summary. U.S. Fish and Wildlife Service. Phoenix, Arizona.

U.S. Fish and Wildlife Service. 2013i. Designation of critical habitat for southwestern willow flycatcher; final rule. Federal Register Vol. 78, No. 2. pp. 344-534.

U.S. Fish and Wildlife Service. 2013j. Determination of endangered species status for Jemez Mountains salamander (*Plethodon neomexicanus*) throughout its range; final rule. Federal Register Vol. 78, No. 175. pp. 55600-55627.

U.S. Fish and Wildlife Service. 2013k. Designation of critical habitat for the Jemez Mountains salamander. Federal Register Vol. 78, No. 244. pp. 69569-69591.

U.S. Fish and Wildlife Service. 2013l. Neosho madtom (*Noturus placidus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Kansas Ecological Services Field Office, Manhattan, Kansas

U.S. Fish and Wildlife Service. 2013m. Designation of critical habitat for the northern Mexican gartersnake and narrow-headed gartersnake; Proposed rule. Federal Register Vol. 78, No. 132. pp. 41549-41608.

U.S. Fish and Wildlife Service. 2013n. Proposed threatened status for the western distinct population segment of the yellow-billed cuckoo (*Coccyzus americanus*); Proposed rule. Federal Register Vol. 78, No. 192. pp. 61622-61666.

U.S. Fish and Wildlife Service. 2013o. Endangered species status for the diamond darter. Final Rule. Federal Register Vol. 78, No. 144. pp. 45074-45095.

U.S. Fish and Wildlife Service. 2013p. Proposed endangered status for the Zuni bluehead sucker. Federal Register Vol. 78, No. 17. pp. 5369-5385.

U.S. Fish and Wildlife Service. 2013q. Interior least tern (*Sternula antillarum*) 5-year review summary and evaluation. U.S. Fish and Wildlife Service, Jackson, Mississippi.

U.S. Fish and Wildlife Service. 2013r. Designation of critical habitat for the southwestern willow flycatcher; final rule. Federal Register Vol. 78, No. 2. pp. 344-534.

U.S. Fish and Wildlife Service. 2014a. White-Nose Syndrome Fact Sheet.

U.S. Fish and Wildlife Service. 2014b. Partnerships for Ohio River mussels.

http://www.fws.gov/midwest/endangered/clams/ohio_rvr.html . Accessed March 2015

U.S. Fish and Wildlife Service. 2014c. Designation of critical habitat for the New Mexico meadow jumping mouse. Proposed rule. Federal Register Vol. 79, No. 67. pp. 19307-19313.

U.S. Fish and Wildlife Service. 2014d. Utah prairie dog (*Cynomys parvidens*) status of the species: May 2014. U.S. Fish and Wildlife Service, West Valley City, Utah. 14 pp.

U.S. Fish and Wildlife Service. 2014e. Species status assessment report New Mexico meadow jumping mouse (*Zapas hudsonius luteus*). U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2014f. Five year review for the Preble's meadow jumping mouse (*Zapas hudsonius preblei*). U.S. Fish and Wildlife Service, Lakewood, Colorado.

U.S. Fish and Wildlife Service. 2014g. Southwestern willow flycatcher (*Empidonax traillii extimus*) 5-year review and evaluation. U.S. Fish and Wildlife Service, Phoenix, Arizona.

U.S. Fish and Wildlife Service. 2014h. Threatened status for Gunnison sage grouse; final rule. Federal Register Vol. 79, No. 224. pp. 69192-69310.

U.S. Fish and Wildlife Service. 2014i. Designation of critical habitat for Gunnison sage grouse; final rule. Federal Register Vol. 79, No. 224. pp. 69312-69363.

U.S. Fish and Wildlife Service. 2014l. Mitchell's saytr butterfly (*Neonympha mitchellii mitchellii*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Midwest Region, East Lansing Field Office, East Lansing, Michigan.

U.S. Fish and Wildlife Service. 2014m. Revised recovery plan for the pallid sturgeon (*Scaphirhynchus albus*). U.S. Fish and Wildlife Service, Denver, Colorado.

U.S. Fish and Wildlife Service. 2014n. Threatened species status for northern Mexican gartersnake and narrow-headed gartersnake. Federal Register Vol. 79, No. 130. pp. 38678-38746.

U.S. Fish and Wildlife Service. 2014o. Threatened species status for black pinesnake. Federal Register Vol. 79, No. 194. pp. 60406-60419.

U.S. Fish and Wildlife Service. 2014p. Determination of threatened status for the western Distinct Population Segment of the yellow-billed cuckoo (*Coccyzus americanus*). Federal Register Vol. 79, No. 192. pp. 59991-60038.

U.S. Fish and Wildlife Service. 2014q. Designation of critical habitat for the western distinct population segment of the yellow-billed cuckoo; Proposed rule. Federal Register Vol. 79, No. 158. pp. 48548-48652.

U.S. Fish and Wildlife Service. 2014r. Designation of critical habitat for *Physaria globosa* (Short's bladderpod), *Helianthus verticillatus* (whorled sunflower), and *Leavenworthia crassa* (fleshy-fruit gladecress); Final rule. Federal Register Vol. 79, No. 165. pp. 50990-51039.

U.S. Fish and Wildlife Service. 2014s. 5-year review for Kral's water-plantain (*Sagittaria secundifolia*). U.S. Fish and Wildlife Service, Southeast Region, Alabama Ecological Services Field Office Daphne, Alabama. 16 pp.

U.S. Fish and Wildlife Service. 2014t. 5-year review for Navajo sedge (*Carex specuicola*). U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, Phoenix, Arizona. 31 pp.

U.S. Fish and Wildlife Service. 2014u. Slender chub (*Erimystax cahni*), 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Cookville Ecological Services Field Office, Cookville, Tennessee.

U.S. Fish and Wildlife Service. 2014v. Palezone shiner (*Notropis albizonatus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Kentucky Ecological Services Field Office, Frankfort, Kentucky.

U.S. Fish and Wildlife Service. 2014w. Endangered species status for the Zuni bluehead sucker; Final Rule. Federal Register Vol. 79, No. 142. pp. 43132-43161.

U.S. Fish and Wildlife Service. 2015a. Endangered species status for the Big Sandy crayfish and the Guyandotte River crayfish; Proposed rule. Federal Register Vol. 80, No. 66. pp. 18710-18739.

U.S. Fish and Wildlife Service. 2015b. Flattened musk turtle fact sheet. Downloaded from www.fws.gov. Accessed July 2015.

U.S. Fish and Wildlife Service. 2015c. Designation of critical habitat for black pinesnake; Proposed rule: Reopening of comment period. Federal Register Vol. 80, No. 47. pp. 12845-12874.

U.S. Fish and Wildlife Service. 2015d. 2015 Indiana bat population estimate. Available at: <http://www.fws.gov/midwest/Endangered/mammals/inba/pdf/2015IBatPopEstimate25Aug2015v2.pdf>

U.S. Fish and Wildlife Service. 2015e. Threatened species status for Kentucky arrow darter with 4(d) rule. Proposed Rule. Federal Register Vol. 80, No. 195. pp. 60962-60988.

U.S. Fish and Wildlife Service. 2015f. Blackside dace *Phoxinus cumberlandensis* (=Blackside dace *Chrosomus cumberlandensis*) 5-year review and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Kentucky Ecological Services Field Office, Frankfort, Kentucky.

U.S. Fish and Wildlife Service. 2015g. Threatened species status for the eastern massasauga rattlesnake. Proposed Rule. Federal Register Vol. 80, No. 189. pp. 58688-58701.

U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration. 2003. Designation of critical habitat for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*). Federal Register Vol. 68, No. 53. pp. 13370-13495.

U.S. Fish and Wildlife Service and U.S. Office of Surface Mining Reclamation and Enforcement. 2009. Coal mining in Tennessee minimum guidelines for the development of protection and enhancement plans for blackside dace (*Phoxinus cumberlandensis*).

U.S. Fish and Wildlife Service, Office of Surface Mining Reclamation and Enforcement, and Interstate Mining Compact Commission. 2009. Rangewide Indiana bat protection and enhancement guidelines. Unpublished document. Available at:
<http://www.fws.gov/frankfort/pdf/INBATPEPGuidelines.pdf>

U.S. Geological Survey. 2011. Coal Fields. United States Department of the Interior (U.S. DOI) <http://nationalatlas.gov/atlasftp.html?openChapters=chpgeol#chpgeol>

U.S. Office of Surface Mining Reclamation and Enforcement. 2011. Biological Assessment Supplement. Kayenta Mine Permit Renewal (Navajo County, Arizona). Office of Surface Mining Reclamation and Enforcement, Western Region.

Venarsky, M.P., F.M. Wilhelm, and F.E. Anderson. 2007. Conservation strategies supported by non-lethal life history sampling of the U.S. federally listed Illinois cave amphipod, *Gammarus acherondytes*. *Journal of Crustacean Biology* 27:202-211.

Wang, N., C.G. Ingersoll, J.L. Kunz, W.G. Brumbaugh, C.M. Kane, R.B. Evans, S. Alexander, C. Walker, and S. Bakaletz, 2013. Toxicity of sediments potentially contaminated by coal mining and natural gas extraction to Unionid mussels and commonly tested benthic invertebrates. *Environmental Toxicology and Chemistry* 32:207-221.

Waters, T. F. 1995. Sediment in streams: sources, biological effects, and control. American Fisheries Soc. Monograph 7, Bethesda, Maryland. 251 pp.

Warren, M.L. and B.M. Burr. 2014. Freshwater Fishes of North America: Volume 1: Petromyzontidae to Catostomidae. Baltimore: Johns Hopkins University Press.

Warren, M.L., Jr., B.M. Burr, S.J. Walsh, H.L. Bart, Jr., R.C. Cashner, D.A. Etnier, B.J. Freeman, B.R. Kuhajda, R.L. Mayden, H.W. Robison, S.T. Ross, and W.C. Starnes. 2000. Diversity, distribution, and conservation status of the native freshwater fishes of the southern United States. *Fisheries* 25(10):7-29.

Wilhelm, F.M., S.J. Taylor, and G.L. Adams. 2006. Comparison of routine metabolic rates of the stygobite, *Gammarus acherondytes* (Amphipoda: Gammaridae) and the stygophile, *Gammarus troglophilus*. *Freshwater Biology* 51:1162-1174.

Williams, J.D., A.E. Bogan, and J.T. Garner. 2008. Freshwater mussels of Alabama and the Mobile Basin in Georgia, Mississippi and Tennessee. University of Alabama Press, Tuscaloosa.

Williams, J.D., A.E. Bogan, J. Brim Box, N.M. Burkhead, R.S. Butler, A. Contreras-Arqueta, K.S. Cummings, J.T. Garner, J.L. Harris, R.G. Howells, S.J. Jepsen, N.A. Johnson, T.J. Morris, T.L. Myers, E. Naranjo García, and J.M. Wisniewski. In press. Conservation status of North American mussels. *Fisheries*.

Wolcott, L.T. and R.J. Neves 1990. Impacts of siltation on the mussel fauna of the Powell River, Virginia. Final report to the U.S. Fish and Wildlife Service Asheville, North Carolina.

Wolcott, L.T. and R.J. Neves. 1994. Survey of the fresh-water mussel fauna of the Powell River, Virginia *Banisteria* 3: 1-14.

Wood, P. J., and P. D. Armitage. 1997. Biological effects of fine sediment in the lotic environment. *Environmental Management*. 21:203-217.

Young, J. R. 1994. The influence of sexual selection on phenotypic and genetic divergence among sage grouse populations. Dissertation, Purdue University, West Lafayette, Indiana, USA.

Young, J.R., C.E. Braun, S.J. Oyler-McCance, J.W. Hupp, and T.W. Quinn. 2000. A new species of sage-grouse (Phasianidae: *Centrocercus*) from southwestern Colorado. *Wilson Bulletin* 112:445-453.

Zettler, L.W., Ahuja, N. S., and McInnis, T. M., Jr. 1996. Insect pollination of the endangered monkey-face orchid (*Platanthera integrilabia*) in McMinn County, Tennessee: One last glimpse of a once common spectacle, *Castanea* 61:14-24.

Zipper, C.E., B. Beaty, G.C. Johnson, J.W. Jones, J.L. Krstolic, B.J.K. Ostby, W.J. Wolfe, and P. Donovan. 2014. Freshwater mussel population status and habitat quality in the Clinch River, Virginia and Tennessee, USA: A featured collection. *Journal of the American Water Resources Association (JAWRA)* 1-13.

**Biological Assessment
for the
Office of Surface Mining Reclamation and Enforcement
for
Federally Listed Threatened and Endangered Species
Species Proposed for Federal Listing**

Prepared by:

U.S. Office of Surface Mining
Washington, D.C.

December 16, 2016



Table of Contents

Purpose of the Biological Assessment	5
Description of the Action	6
Background on SMCRA, OSMRE's Mission, State Regulatory Authorities	6
Consultation History	8
Area of Analysis	9
SMCRA Regulations Affecting Threatened and Endangered Species	11
The Mining Process	13
Potential Effects to Listed Species from Mining Under the Current Regulations.....	20
Exploration.....	24
Permitting.....	24
Erosion and Sedimentation Controls	24
Clearing and Grubbing	25
Blasting	25
Excavation of Overburden and Coal	25
Surface Mining	25
Underground Mining.....	26
Backfilling and Grading, Excess Spoil, and Coal Mine Waste.....	27
Soils and Revegetation	27
Coal Haulage	27
Coal Processing	27
Clean Water Act Wetland and Stream Mitigation.....	28
Coal Combustion Residue Placement.....	28
Bond Release.....	30
The Stream Protection Rule.....	30
Endangered Species Requirements.....	31
Protection of the Hydrologic Balance	32
Definition of Material Damage to the Hydrologic Balance Outside the Permit Area	32
Premining Data Collection and Analysis	33
Monitoring During Mining and Reclamation	34
Activities in or near Streams	35
Mining Through Streams.....	35
Disposal of Excess Spoil and Coal Mine Waste.....	37
Mountaintop Removal and Approximate Original Contour Exceptions	37

Mountaintop Removal.....	37
Steep-Slope Approximate Original Contour Variances	38
Soils and Revegetation	39
Clean Water Act Wetland and Stream Mitigation.....	40
Fish and Wildlife Protection and Enhancement	40
Bonding and Financial Assurance	40
Potential effects to listed species from mining under the Stream Protection Rule	41
Exploration.....	41
Permitting.....	41
Erosion and Sedimentation Controls	43
Clearing and Grubbing	43
Blasting	43
Excavation of Overburden and Coal	44
Surface Mining	44
Underground Mining.....	45
Backfilling, Grading, Excess Spoil and Coal Mine Waste	46
Soils and Revegetation	47
Coal Haulage	47
Coal Processing	48
Clean Water Act Wetland and Stream Mitigation.....	48
Coal Combustion Residue Placement.....	48
Bond Release.....	48
Species Potentially Affected by the Action.....	48
Critical Habitat	49
Birds.....	50
Cuckoos.....	50
Raptors	53
Woodpeckers	58
Passerines (Perching birds).....	60
Shorebirds.....	64
Grouse	68
Reptiles	71
Snakes	71
Turtles	75

Amphibians	79
Salamanders.....	79
Frogs.....	82
Insects	84
Beetles	84
Butterflies	86
Fishes	89
Sturgeon	90
Madtom.....	93
Darters	96
Minnows.....	100
Suckers	106
Trout.....	110
Crustaceans	113
Illinois cave amphipod and Kentucky cave shrimp	113
Big Sandy and Guyandotte River crayfishes.....	115
Mollusks.....	118
Mammals.....	128
Bats.....	128
Other mammals.....	131
Plants.....	139
Xeric Species	140
Mesic Species	145
Hydric Species	150
Uncertainty Associated with the Effects Determinations.....	155
Climate Change.....	156
Conclusions	157
Tables	160
Table 1. Species Potentially Affected By These Actions.	161
Table 2. Species Range and Critical Habitat Overlap with Mineable Coal.	169
Table 3. Species On Which the Action Will Have No Effect.....	178
Literature cited.....	180
Appendix A: Existing SMCRA requirements for listed species protection.....	196

Literature cited

American Coal Ash Association. 2014. Coal combustion product production and use survey for 2012, accessed July 31, 2014, at <http://www.acaa-usa.org/Publications/Production-Use-Reports>

Beaver, F.W., G.H. Groenewold, O.E. Manz, and D.J. Hassett. 1987. The effects of fly ash and flue-gas desulfurization wastes on groundwater quality in a reclaimed lignite strip mine disposal site, v. 1, final report. North Dakota Mining and Mineral Resources Research Institute, Grand Forks, North Dakota.

Black, T.R., B.K. Jones, and H.T. Mattingly. 2013. Development and validation of habitat models for the threatened blackside dace, *Chrosomus cumberlandensis*, at two spatial scales. *Southeastern Naturalist* 12:27–48.

Boschung, H.T., Jr., and R.L. Mayden. 2004. Fishes of Alabama. Smithsonian Institution. 736 p.

Carman, S.M. 2004. Zuni bluehead sucker (*Catastomus discobolus yarrowi*) Recovery Plan. New Mexico Department of Game and Fish, Conservation Services Division, Santa Fe, NM. 40 pp.

Chambers, D.B. and T. Messinger. 2001. Benthic invertebrate communities and their responses to selected environmental factors in the Kanawha River basin, West Virginia, Virginia, and North Carolina. Water-Resources Investigations Report 01-4021. US Geological Survey, Charleston, West Virginia. 52 pp.

Childers, T. 2009. Gunnison sage-grouse status review information request response for Black Canyon of the Gunnison National Park and Curecanti National Recreation Area. 33 pp.

Colorado Division of Wildlife (CDOW). 2009. Spreadsheet summarizing land ownership by Gunnison sage-grouse population and status. Submittal to the USFWS. 5 pp.

Connelly, J. W., S. T. Knick, M. A. Schroeder, and S. Stiver. 2004. Conservation assessment of greater sage-grouse and sagebrush habitats. Western Association of Fish and Wildlife Agencies. www.wafwa.org

Daniel, W.M., D.M. Infante, R.M. Hughes, Y. Tsang, P.C. Esselman, D. Wieferich, K. Herreman, A.R. Cooper, L. Wang, and W.W. Taylor. 2015. Characterizing coal and mineral mines as a regional source of stress to stream fish assemblages. *Ecological Indicators* 50:50-61.

Diamond, J.M., D.W. Bressler, and V.B. Serveiss, 2002, Assessing the relationships between human land uses and the decline of native mussels, fish, and macroinvertebrates in the Clinch and Powell River watershed, USA. *Environmental Toxicology and Chemistry* (21)6:1147-1155.

Eberle, M. and A.C. Razem. 1985. Effects of coal mining and reclamation on ground water in small watersheds in the Allegheny Plateau, Ohio. U.S. Geological Survey, Water Resources Investigations Report 85-4205.

Etnier, D. A. and R. E. Jenkins. 1980. *Noturus stanauli*, a new madtom catfish from the Clinch and Duck rivers, Tennessee. Bulletin of the Alabama Museum of Natural History 5:17-22.

Evans, D.E., C.E. Zipper, P.F. Donovan, and W.L. Daniels. 2014. Long-term trends of specific conductance in waters discharged by coal-mine valley fills in central Appalachia, USA. Journal of the American Water Resources Association (JAWRA) 1-12 10.1111/jawr.12198

Farmer, A.M. 1993. The effects of dust on vegetation-a review. Environmental Pollution 79:63-75.

Faisal, M. and D. Garling. 2004. What is Whirling Disease? North Central Regional Aquaculture Center. Available at <http://www.ncrac.org/NR/rdonlyres/3CBECF1E-2AE0-4661-9C08-29A0A15DE403/26267/Whirling2.pdf>. (Accessed: November 10, 2015).

Fulk, F., B. Autrey, J. Hutchens, J. Gerritsen, J. Burton, C. Cresswell, and B. Jessup. 2003. Ecological assessment of streams in the coal mining region of West Virginia using data collected by US EPA and environmental consulting firms. EPA 903-R-00-0013B. National Exposure Research Laboratory, US Environmental Protection Agency, Cincinnati, Ohio.

Froese, R. and D. Pauly. Editors. 2015. FishBase. World Wide Web electronic publication. www.fishbase.org, version (08/2015).

Gunnison Sage-grouse Rangewide Steering Committee (GSRSC). 2005. Gunnison sage-grouse rangewide conservation plan. Colorado Division of Wildlife, Denver, Colorado, USA.

Hamilton, D.A. and J.L. Wilson. 1977. A generic study of strip mining impacts on groundwater resources. Energy Laboratory Report No. MIT-EL-77-017. Massachusetts Institute of Technology.

Hart, B. 2004. A Survey for the Mitchell's Satyr (*Neonympha mitchellii* French) in the National Forests in Alabama. Final Report Prepared for the U.S. Fish and Wildlife Service, Daphne, AL. Report prepared by the Alabama Natural Heritage Program, The Nature Conservancy, Montgomery, AL. 222 pp.

Hartman, K.J., M.D. Kaller, J.W. Howell, and J.A. Sweka, 2005. How much do valley fills influence headwater streams? *Hydrobiologia* 532:91-102.

Hitt, N.P. and D.B. Chambers. 2014. Temporal changes in taxonomic and functional diversity of fish assemblages downstream from mountaintop mining. *Freshwater Science* 33(3):915-926.

Indiana Division of Natural Resources. n.d. Citizen's guide to coal mine blasting in Indiana.

Intergovernmental Panel on Climate Change. 2013. Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)].

Jacquemin, S.J. and J.C Doll. 2015. Macroecology of North American suckers (Catostomidae): tests of Bergmann's and Rapoport's rules. *Ecology and Evolution* 5(18): 3895-3904.

Jelks, H.L., S.J. Walsh, N. M. Burkhead, S. Contreras-Balderas, E. Diaz-Pardo, D. A. Hendrickson, J. Lyons, N.E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J.J. Schmitter-Soto, E.B. Taylor and M. L. Warren Jr. (2008): Conservation status of imperiled North American freshwater and diadromous fishes. *Fisheries* 33:372-407.

Johnston, C.E. and L.M. Page. 1992. The evolution of complex reproductive strategies in North American minnows (Cyprinidae) in: *Systematics, Historical Ecology, and North American Freshwater Fishes* (pp. 600-621). Palo Alto, California: Stanford University Press.

Johnson, M.J., J.A. Holmes, C. Calvo, I. Samuels, S. Krantz, and M.K. Sogge, 2007. Yellow-billed cuckoo distribution, abundance, and habitat use along the lower Colorado and tributaries, 2006 annual report. U.S. Geological Survey Open-File Report 2007-1097 . Available online at <http://pubs.usgs.gov/of/2007/1097>.

Johnson, M.S., W.F. Henley, R. J. Neves, J.W. Jones, R.S. Butler & S. D. Hanlon. 2012. Freshwater mussels of the Powell River, Virginia and Tennessee: abundance and distribution in a biodiversity hotspot. *Walkerana* (15)2:83-98.

Johnson, P. D., A. E. Bogan, K. M. Brown, N. M. Burkhead, J. R. Cordeiro, J. T. Garner, P. D. Hartfield, D. A. W. Lepitzki, G. L. Mackie, E. Pip, T. A. Tarpley, J. S. Tiemann, N. V. Whelan, and E. E. Strong. 2013. Conservation status of freshwater gastropods of Canada and the United States. *Fisheries* 38(6):247-282.

Johnson, P.D. 2009. Freshwater snail biodiversity and conservation. Virginia Cooperative Extension. Publication 420-530

Jones, J., S. Ahlstedt, B. Ostby, B. Beaty, M. Pinder, N. Eckert, R. Butler, D. Hubbs, C. Walker, S. Hanlon, J. Schmerfeld, and R. Neves. 2014. Clinch River freshwater mussels upstream of Norris Reservoir, Tennessee and Virginia: A quantitative assessment from 2004 to 2009. *Journal of the American Water Resources Association (JAWRA)* 1-17.

Karl, T.R., J.M. Melillo, and T.C. Peterson (eds). 2009. Global climate change impacts in the United States. Cambridge University Press.

Kitchel, H.E., J.C. Widlak, and R.J. Neves. 1981. The impact of coal-mining waste on endangered mussel populations in the Powell River, Lee County, Virginia. Report to Virginia State Water Control Board, Richmond. 26 pp.

Lee, D.S., C.R. Gilbert, C.H. Hocutt, R.E. Jenkins, D.E. McAllister, and J.R. Stauffer. Atlas of North American Fishes. Raleigh, NC: North Carolina State Museum of Natural History, 1994.

Lemly, A.D. 1993. Teratogenic effects of selenium in natural populations of freshwater fish. *Ecotoxicology and Environmental Safety* 26(2):181-204.

Lindberg, T.T., E.S. Bernhardt, R. Bier, A. Helton, R. Merola, A. Vengosh, R.T. Di Giulio. 2011. Cumulative impacts of mountaintop mining on an Appalachian watershed. Proceedings of the National Academy of Sciences 108: 20929-20934, 20931. Available at <http://www.pnas.org/cgi/doi/10.1073/pnas.1112381108>

Marsh, P.C., Pacey, C.A. and Kesner, B.R. 2003. Decline of the razorback sucker in Lake Mohave, Colorado River, Arizona and Nevada. Transactions of the American Fisheries Society 132: 1251-1256.

McCann, M.T. & R.J. Neves. 1992. Toxicity of coal-related contaminants to early life stages of freshwater mussels in the Powell River, Virginia. Unpublished Report, U.S. Fish and Wildlife ServiceNatureServe. 2014.

Merricks, T.C., D.S. Cherry, C.E. Zipper, R. Currie, and T. Valenti, 2007. Coal-mine hollow fill and settling pond influences on headwater streams in southern West Virginia, USA. Environmental Monitoring and Assessment 129:359-37

Michael, P.R., M.J. Superfesky, & L.J. Uranowski. (2010). Challenges to applying geomorphic and stream reclamation methodologies to mountaintop mining and excess spoil fill construction in steep-slope topography (e.g. Central Appalachia). Presented at 2010 National Meeting of the American Society of Mining and Reclamation. Pittsburgh, PA. U.S. Department of the Interior.

National Research Council. 1984. Highwall elimination and return to approximate original contour as required in the Surface Mining Control and Reclamation Act of 1977 : a report The National Academies Press, Washington, D.C., 200 p.

_____. 2006. Managing coal combustion residues in mines. The National Academies Press, Washington, D.C., 256 p.

_____. 1990. Surface coal mining effects on ground water recharge. National Academy Press. Washington, D.C. 159 p.

NatureServe. 2013. *Xyrauchen texanus*. The IUCN Red List of Threatened Species 2013: e.T23162A19032625. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T23162A19032625.en> . Downloaded on **10 November 2015**.

NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available at <http://explorer.natureserve.org>. (Accessed: November, 2015).

Palmer, I.S. 1986. A study of the effect of fly ash burial on the selenium content of vegetation at the San Juan Mine and Navajo Mine at Farmington, New Mexico. Report to Office of Surface Mining Reclamation and Enforcement and the San Juan and Navajo Mine companies.

Parmalee, P.W. and A.E. Bogan, 1998. The freshwater mussels of Tennessee. University of Tennessee Press, Knoxville.

Patterson, R.L. 1952. The sage grouse in Wyoming. Wyoming Game and Fish Commission, Sage Books Inc., Denver, CO. 344 pp.

Pauley, T. K. 2008. Natural history and status of the Cheat Mountain salamander, *Plethodon nettingi*. Unpublished Report to the U.S. Fish and Wildlife Service. West Virginia Field Office. 8pp

Petty, T., K. Fulton, M. Strager, G. Merovich, J. Stiles, and P. Ziemkiewicz. 2010. Landscape indicators and thresholds of stream ecological impairment in an intensively mined Appalachian watershed. *Journal of the North American Benthological Society* 29(4): 1292–1309.

Pond, G.J. 2004. Effects of surface mining and residential land use on headwater stream biotic integrity in the eastern Kentucky coalfield region. Kentucky Department for Environmental Protection, Division of Water, Frankfort, Kentucky. 48 pp.

Pond, G.J., M.E. Passmore, F.A. Borsuk, L. Reynolds, and C.J. Rose. 2008. Downstream effects of mountaintop coal mining: Comparing biological conditions using family- and genus level macroinvertebrate bioassessment tools. *Journal of the North American Benthological Society* 27:717-737.

Pond, G.J., M.E. Passmore, N.D. Pointon, J.K. Felbinger, C.A. Walker, K.J.G. Krock, G.B. Fulton, and W.L. Nash. 2014. Long-term impacts on macroinvertebrates downstream of reclaimed mountaintop mining valley fills in Central Appalachia. *Environmental Management* 54: 919-933.

Price, J.E., C.E. Zipper, J.W. Jones, and C. Franck. 2011. Water and sediment quality in the Clinch and Powell Rivers of Virginia and Tennessee, 1964–2010. Virginia Polytechnical Institute and State University, Blacksburg. 146 pp.

Price, J.E., C.E. Zipper, J.W. Jones, and C. T. Franck. 2014. Water and sediment quality in the Clinch River, Virginia and Tennessee, USA, over 5 decades. *Journal of the American Water Resources Association (JAWRA)* 1-22.

Riley, C.V. 1960. The ecology of water areas associated with coal strip-mined lands in Ohio. *Ohio Journal of Science* 60(2):106-121.

Rosen, P. C. and C. R. Schwalbe. 1988. Status of the Mexican and narrow-headed garter snakes (*Thamnophis eques megalops* and *Thamnophis rufipunctatus rufipunctatus*) in Arizona. Unpubl. report from Arizona Game and Fish Dept. (Phoenix, Arizona) to U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

Sharifi, M.R., A.C. Gibson, and P.W. Rundel. 1997. Surface dust impacts on gas exchange in Mojave desert shrubs. *The Journal of Applied Ecology* 34:837-846.

Shiels, A.S. 2015. Pennsylvania Fish and Boat Commission, Nongame and Endangered Species Unit, *Bog Turtles Slipping Away*, available at: www.fish.state.pa.us/education/catalog/ab/bogturtl.htm, accessed July 2015

Shuangying Y, R.S. Halbrook, D.W. Sparling, and R. Colombo (2011). Metal accumulation and evaluation of effects in a freshwater turtle. *Ecotoxicology* 20:1801-1812

Soucek, D. J., D. S. Cherry, and C. E. Zipper. 2003. Impacts of mine drainage and other

nonpoint source pollutants on aquatic biota in the upper Powell River System, Virginia. *Human and Ecological Risk Assessment* 9(4):1059-1073

Starnes, L.B. and W.C. Starnes. 1981. Biology of the blackside dace *Phoxinus cumberlandensis*. *American Midland Naturalist* 106:360-372.

Stauffer, J.R., and C.P. Ferreri. 2002. Characterization of stream fish assemblages in selected regions of mountain top removal/valley fill coal mining. Draft programmatic environmental impact statement on mountaintop mining/valley fills in Appalachia. EPA 903-R-00-0013B. US Environmental Protection Agency, Philadelphia, Pennsylvania.

Strayer, J.A., A. Downing, W.R. Haag, T.L. King, J.B. Layzer, T.J. Newton, and S.J. Nichols. 2004. Changing perspectives on pearly mussels, North America's most imperiled animals. *BioScience* 54:429-439.

Szymanski, J., C. Pollack, L. Ragan, M. Redmer, L. Clemency, K. Voorhies, and J. Jonathan. 2015. Species status assessment for the eastern massasauga rattlesnake (*Sistrurus catenatus*). U.S. Fish and Wildlife Service.

Thoma, R.F. 2009. The conservation status of *Cambarus (Puncticambarus) veteranus*, Big Sandy crayfish; *Cambarus (Jugicambarus) jezerinaci*, spiny scale crayfish; and *Cambarus (Cambarus) sp. A*, Blue Ridge crayfish. MBI Technical Report MBI/2009-6-1.

Thoma, R.F. 2010. The conservation status of *Cambarus (Puncticambarus) veteranus*, Big Sandy crayfish and *Cambarus (Jugicambarus) parvoculus*, mountain midget crayfish in Kentucky. MBI Technical Report MBI/2010.

Thoma, R.F., Z.J. Loughman, and J.W. Fetzner. 2014. *Cambarus (Puncticambarus) callainus*, a new species of crayfish (Decapoda: Cambaridae) from the Big Sandy River basin in Kentucky, Virginia, and West Virginia, USA. *Zootaxa*

U.S. EPA. The effects of mountaintop mines and valley fills on aquatic ecosystems of the Central Appalachian coalfields (2011 Final). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/138F, 2011.

U.S. Fish and Wildlife Service. 1976. Determination of critical habitat for American crocodile, California condor, Indiana bat, and Florida manatee. *Federal Register* Vol. 41, No. 187. pp. 41914-41916.

U.S. Fish and Wildlife Service. 1977. Final rule: correction and augmentation of published rulemaking. *Federal Register* Vol. 42, No. 184. pp. 47840-47845.

U.S. Fish and Wildlife Service. 1979. Listing of Virginia and Ozark big-eared bats as endangered species, and critical habitat determination. *Federal Register* Vol. 44, No. 232. pp. 69206-69208.

U.S. Fish and Wildlife Service. 1983a. Determination of endangered status and designation of critical habitat for the Kentucky cave shrimp. *Federal Register* Vol. 48, No. 198. pp. 46337-48342.

U.S. Fish and Wildlife Service. 1983b. Recovery plan for the spotfin chub (*Erimonax monachus*). Atlanta, Georgia. 46 pp.

U.S. Fish and Wildlife Service. 1984. Mesa Verde Cactus (*Sclerocactus mesae-verdae*) recovery plan. U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico. 63 pp.

U.S. Fish and Wildlife Service. 1985. Determination of *Carex specuicola* to be a threatened species with critical habitat. Federal Register Vol. 50, No. 89. pp. 19370-19374.

U.S. Fish and Wildlife Service. 1987. Navajo sedge recovery plan. U.S. Fish and Wildlife Service. Albuquerque, New Mexico. 39 pp.

U.S. Fish and Wildlife Service. 1988a. Kentucky cave shrimp recovery plan. U.S. Fish and Wildlife Service, Atlanta , Georgia. 47 pp.

U.S. Fish and Wildlife Service. 1988b. Great Lakes and Northern Great Plains piping plover recovery plan. U.S. Fish and Wildlife Service Newton Corner, Massachusetts.

U.S. Fish and Wildlife Service. 1989a. Determination of threatened status for the Cheat Mountain salamander and endangered status for the Shenandoah salamander. Federal Register Vol. 54, No. 159. pp. 34464-34468.

U.S. Fish and Wildlife Service. 1989b. Determination of endangered species status for the American burying beetle. Federal Register Vol. 54, No. 133. pp. 29652-29655.

U.S. Fish and Wildlife Service. 1990a. Threatened status for *Sagittaria secundifolia* (Kral's water plantain). Federal Register Vol. 55, No.72. pp. 13907-13911.

U.S. Fish and Wildlife Service. 1990b. Harperella (*Ptilimnium nodosum*) recovery plan. Newton Corner, Massachusetts. 60 pp.

U.S. Fish and Wildlife Service. 1990c. Recovery plan for the interior population of the least tern (*Sterna antillarum*).

U.S. Fish and Wildlife Service. 1991a. Emergency rule to list the Mitchell's saytr butterfly as endangered. Federal Register Vol. 56, No. 122. pp. 28825-28828.

U.S. Fish and Wildlife Service. 1991b. *Conradina verticillata* (Cumberland rosemary) determined to be threatened. Federal Register Vol. 56, No. 230. pp. 60937-60941.

U.S. Fish and Wildlife Service. 1992. Determination of endangered species status for Mitchell's saytr butterfly. Federal Register Vol. 57, No. 98. pp. 21564-21569.

U.S. Fish and Wildlife Service. 1994. Determination of critical habitat for the Colorado River endangered fishes: razorback sucker, Colorado squawfish, humpback chub, and bonytail chub. Federal Register Vol. 59, No. 54. pp. 13374-13400.

U.S. Fish and Wildlife Service. 1997. Recovery plan for the palezone shiner (*Notropis albizonatus*). Atlanta, Georgia. 27 pp.

U.S. Fish and Wildlife Service. 1998a. Greenback cutthroat recovery plan. U.S. Fish and Wildlife Service, Denver, Colorado.

U.S. Fish and Wildlife Service. 2002a. Illinois cave amphipod (*Gammarus acherondytes*) recovery plan. U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota.

U.S. Fish and Wildlife Service. 2002b. Final recovery plan southwestern willow flycatcher (*Empidonax traillii extimus*) U.S. Fish and Wildlife Service, Albuquerque, New Mexico

U.S. Fish and Wildlife Service. 2002c. Razorback sucker (*Xyrauchen texanus*) recovery goals: amendment and supplement to the Razorback Sucker Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

U.S. Fish and Wildlife Service. 2002d. Designation of critical habitat for the northern Great Plains breeding population of the piping plover. Federal Register Vol. 67. No. 176. pp. 57638-57717.

U.S. Fish and Wildlife Service. 2003a. Recovery plan for the red-cockaded woodpecker (*Picoides borealis*): second revision. U.S. Fish and Wildlife Service, Atlanta, Georgia.

U.S. Fish and Wildlife Service. 2003b. Designation of critical habitat for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*). Federal Register Vol. 68, No. 53. pp. 13370-13495.

U.S. Fish and Wildlife Service. 2003c. Gila trout recovery plan (third revision). Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2004a. Recovery plan for Cumberland elktoe (*Alasmidonta atropurpurea*), oyster mussel (*Epioblasma capsaeformis*), Cumberlandian Combshell (*Epioblasma brevidens*), purple bean (*Villosa perpurpurea*), and rough rabbitsfoot (*Quadrula cylindrica strigillata*). Atlanta, Georgia. 174 pp.

U.S. Fish and Wildlife Service. 2004b. Designation of critical habitat for five endangered mussels in the Tennessee and Cumberland River basins. Federal Register Vol. 69, No. 168 pp. 53136-53180.

U.S. Fish and Wildlife Service. 2004c. Designation of critical habitat for three threatened mussels and eight endangered mussels in the Mobile River Basin. Federal Register Vol. 69, No. 126 pp. 40084-40171.

U.S. Fish and Wildlife Service. 2004d. Final designation of critical habitat for the Mexican spotted owl; final rule. Federal Register Vol. 69, No. 168 pp. 53182-53230

U.S. Fish and Wildlife Service. 2005. Recovery plan for 6 Mobile River Basin aquatic snails. U.S. Fish and Wildlife Service. Jackson, Mississippi.

U.S. Fish and Wildlife Service. 2006a. Six Mobile River Basin aquatic snails 5-year review. U.S. Fish and Wildlife Service. Jackson, Mississippi.

U.S. Fish and Wildlife Service. 2006b. Red cockaded woodpecker (*Picoides borealis*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service. Clemson, South Carolina.

U.S. Fish and Wildlife Service. 2007a. Flat-spined three-toothed land snail (*Triodopsis platysayoides*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, West Virginia Field Office, Elkins, West Virginia.

U.S. Fish and Wildlife Service. 2007b. Chiricahua leopard frog (*Lithobates chiricahuensis*) recovery plan. Southwest Region U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2008a. Virginia big-eared bat (*Corynorhinus townsendii virginianus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service West Virginia Field Office, Elkins, West Virginia.

U.S. Fish and Wildlife Service. 2008b. American burying beetle (*Nicrophorus americanus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service New England Field Office, Concord, New Hampshire.

U.S. Fish and Wildlife Service. 2008c. 5-Year Review for the Wright fishhook cactus. U.S. Fish and Wildlife Service, Utah Field Office. 25 pp.

U.S. Fish and Wildlife Service. 2008d. Designation of critical habitat for *Helianthus paradoxus* (Pecos Sunflower); Final Rule. Federal Register Vol. 73, No. 63, pp. 17762-17807.

U.S. Fish and Wildlife Service. 2009a. Gray bat (*Myotis grisescens*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service Midwest Region, Columbia Missouri Ecological Services Field Office. Columbia, Missouri.

U.S. Fish and Wildlife Service. 2009b. Cheat Mountain salamander (*Plethodon nettingi*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service West Virginia Field Office, Elkins, West Virginia.

U.S. Fish and Wildlife Service. 2009c. Gulf sturgeon (*Acipenser oxyrinchus desotoi*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Panama City Ecological Services Field Office, Panama City, Florida

U.S. Fish and Wildlife Service. 2009d. Designation of critical habitat for Alabama sturgeon (*Scaphirhynchus suttkusi*). Federal Register Vol. 74, No. 104. pp. 26488-26510

U.S. Fish and Wildlife Service. 2009e. 5-year review for the gentian pinkroot (*Spigelia gentianoides*). U.S. Fish and Wildlife Service, Southeast Region, Panama City, Florida. 18 pp.

U.S. Fish and Wildlife Service. 2009f. 5-year review for the *Geocarpon minimum*. U.S. Fish and Wildlife Service, Southeast Region, Arkansas Ecological Services Field Office, Conway, Arkansas. 23 pp.

U.S. Fish and Wildlife Service. 2009g. Apache trout recovery plan, second revision. Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2009f. Piping plover 5 year review: summary and evaluation. U.S. Fish and Wildlife Service, Hadley Massachusetts and East Lansing, Michigan.

U.S. Fish and Wildlife Service. 2010a. Kentucky cave shrimp (*Palamoenias ganteri*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service. Kentucky Ecological Services Field Office, Frankfort, Kentucky.

U.S. Fish and Wildlife Service. 2010b. Revised critical habitat for the Preble's meadow jumping mouse in Colorado. Federal Register Vol. 75, No. 240. pp. 78430-78483.

U.S. Fish and Wildlife Service. 2010c. Alabama sturgeon (*Scaphirhynchus sutkussi*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Alabama Ecological Services Field Office, Daphne, Alabama.

U.S. Fish and Wildlife Service. 2010d. Yellowfin madtom (*Noturus flavipinnis*) Smoky madtom (*Noturus baileyi*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Tennessee Ecological Services Field Office, Southeast Region, Cookeville, Tennessee

U.S. Fish and Wildlife Service. 2010e. Protecting and restoring the Powell River watershed, Virginia Natural Resource Damage Assessment and Restoration Program (Fact Sheet). U.S. Fish and Wildlife Service, Virginia Field Office, Gloucester, Virginia

U.S. Fish and Wildlife Service. 2010f. 5-year review for the eastern prairie fringed orchid (*Platanthera leucophaea*). U.S. Fish and Wildlife Service, Chicago Illinois Field Office, Barrington, Illinois. 32 pp.

U.S. Fish and Wildlife Service. 2011a. 90 day finding on a petition to list the eastern small-footed bat and the northern long-eared bat as threatened or endangered. Federal Register Vol. 76, No. 125. pp. 38095-38106.

U.S. Fish and Wildlife Service. 2011b. Illinois cave amphipod *Gammarus acherondytes* 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Midwest Region, Rock Island Ecological Services Field Office, Moline Illinois.

U.S. Fish and Wildlife Service. 2011c. Chiricahua leopard frog (*Lithobates chiricahuensis*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service Arizona Ecological Services Office, Phoenix, Arizona.

U.S. Fish and Wildlife Service. 2011d. 5-year review for the Wright fishhook cactus. U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office. 49 pp.

U.S. Fish and Wildlife Service. 2011e. 5-year review for the North Park phacelia. U.S. Fish and Wildlife Service, Western Colorado Field Office. 25 pp.

U.S. Fish and Wildlife Service. 2011f. Species assessment and listing priority assignment form for the yellow-billed cuckoo.

U.S. Fish and Wildlife Service. 2011g. Cumberland rosemary (*Conradina verticillata*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Tennessee Ecological Services Field Office, Cookeville, Tennessee. 14 pp.

U.S. Fish and Wildlife Service. 2011e. Endangered status for the Cumberland darter, rush darter, yellowcheek darter, Chucky madtom, and laurel dace. Federal Register Vol. 76, No. 153. pp. 48722-48740.

U.S. Fish and Wildlife Service. 2012a. Utah prairie dog (*Cynomys parvidens*) revised recovery plan. U.S. Fish and Wildlife Service Mountain Prairie Region, Denver, Colorado. 169 pp.

U.S. Fish and Wildlife Service. 2012b. Proposed endangered status for the Neosho mucket, threatened status for the rabbitsfoot, and designation of critical habitat for both species; proposed rule. Federal Register Vol. 77, No. 200. Pp 63440-63536

U.S. Fish and Wildlife Service. 2012c. Finerayed pigtoe *Fusconaia cuneolus* 5-year review: summary and evaluation. U.S. Fish and Wildlife Service. Southeast Region Asheville Ecological Services Field Office Asheville, North Carolina.

U.S. Fish and Wildlife Service. 2012d. Revising the special rule for the Utah prairie dog; final rule Federal Register Vol. 77, No. 149 pp. 46158-46183.

U.S. Fish and Wildlife Service. 2012e. U.S. Fish and Wildlife Service. Recovery plan for the Mexican spotted owl (*Strix occidentalis lucida*), first revision. Albuquerque, New Mexico. 414 pp.

U.S. Fish and Wildlife Service. 2012g. Designation of critical habitat for *Ipomopsis polyantha* (Pagosa skyrocket), *Penstemon debilis* (Parachute beardtongue), and *Phacelia submutica* (DeBeque phacelia); Final rule. Federal Register Vol. 77, No. 156. pp. 48368-48418.

U.S. Fish and Wildlife Service. 2012h. Designation of critical habitat for the Cumberland darter, rush darter, yellowcheek darter, Chucky madtom, and laurel dace. Federal Register Vol. 77, No. 200. pp. 63604-63668.

U.S. Fish and Wildlife Service. 2012i. Designation of critical habitat for the Zuni bluehead sucker (proposed rule). Federal Register Vol. 80, No. 71. pp. 19941-19953.

U.S. Fish and Wildlife Service. 2013a. Recovery plan for the black-footed ferret (*Mustela nigripes*) U.S. Fish and Wildlife Service, Denver, Colorado. 157 pp.

U.S. Fish and Wildlife Service. 2013b. Endangered status for the Neosho mucket and threatened status for the rabbitsfoot. Federal Register Vol. 78. No. 180, pp. 57076-57097

U.S. Fish and Wildlife Service. 2013c. 2013 rangewide population estimate for the Indiana bat (*Myotis sodalis*) by USFWS region. U.S. Fish and Wildlife Service Bloomington, Indiana Ecological Services Field Office.

U.S. Fish and Wildlife Service. 2013d. Listing the northern long-eared bat as an endangered species. Federal Register Vol. 78, No. 231 pp. 72058-72059.

U.S. Fish and Wildlife Service. 2013e. Designation of critical habitat for the fluted kidneyshell and slabside pearlymussel. Federal Register Vol. 78, No. 187. pp. 59556-59620

U.S. Fish and Wildlife Service. 2013f. Tan riffleshell *Epioblasma florentina walkeri* 5-year review: summary and evaluation. U.S. Fish and Wildlife Service. Southeast Region Asheville Ecological Services Field Office Asheville, North Carolina.

U.S. Fish and Wildlife Service. 2013g. California condor (*Gymnogyps californianus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Pacific Southwest Region.

U.S. Fish and Wildlife Service. 2013h. Mexican spotted owl (*Strix occidentalis lucida*) 5-year review short form summary. U.S. Fish and Wildlife Service. Phoenix, Arizona.

U.S. Fish and Wildlife Service. 2013i. Designation of critical habitat for southwestern willow flycatcher; final rule. Federal Register Vol. 78, No. 2. pp. 344-534.

U.S. Fish and Wildlife Service. 2013j. Determination of endangered species status for Jemez Mountains salamander (*Plethodon neomexicanus*) throughout its range; final rule. Federal Register Vol. 78, No. 175. pp. 55600-55627.

U.S. Fish and Wildlife Service. 2013k. Designation of critical habitat for the Jemez Mountains salamander. Federal Register Vol. 78, No. 244. pp. 69569-69591.

U.S. Fish and Wildlife Service. 2013l. Neosho madtom (*Noturus placidus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Kansas Ecological Services Field Office, Manhattan, Kansas

U.S. Fish and Wildlife Service. 2013m. Designation of critical habitat for the northern Mexican gartersnake and narrow-headed gartersnake; Proposed rule. Federal Register Vol. 78, No. 132. pp. 41549-41608.

U.S. Fish and Wildlife Service. 2013n. Proposed threatened status for the western distinct population segment of the yellow-billed cuckoo (*Coccyzus americanus*); Proposed rule. Federal Register Vol. 78, No. 192. pp. 61622-61666.

U.S. Fish and Wildlife Service. 2013o. Endangered species status for the diamond darter. Final Rule. Federal Register Vol. 78, No. 144. pp. 45074-45095.

U.S. Fish and Wildlife Service. 2013p. Proposed endangered status for the Zuni bluehead sucker. Federal Register Vol. 78, No. 17. pp. 5369-5385.

U.S. Fish and Wildlife Service. 2013q. Interior least tern (*Sternula antillarum*) 5-year review summary and evaluation. U.S. Fish and Wildlife Service, Jackson, Mississippi.

U.S. Fish and Wildlife Service. 2013r. Designation of critical habitat for the southwestern willow flycatcher; final rule. Federal Register Vol. 78, No. 2. pp. 344-534.

U.S. Fish and Wildlife Service. 2014a. White-Nose Syndrome Fact Sheet.

U.S. Fish and Wildlife Service. 2014b. Partnerships for Ohio River mussels.

http://www.fws.gov/midwest/endangered/clams/ohio_rvr.html . Accessed March 2015

U.S. Fish and Wildlife Service. 2014c. Designation of critical habitat for the New Mexico meadow jumping mouse. Proposed rule. Federal Register Vol. 79, No. 67. pp. 19307-19313.

U.S. Fish and Wildlife Service. 2014d. Utah prairie dog (*Cynomys parvidens*) status of the species: May 2014. U.S. Fish and Wildlife Service, West Valley City, Utah. 14 pp.

U.S. Fish and Wildlife Service. 2014e. Species status assessment report New Mexico meadow jumping mouse (*Zapas hudsonius luteus*). U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2014f. Five year review for the Preble's meadow jumping mouse (*Zapas hudsonius preblei*). U.S. Fish and Wildlife Service, Lakewood, Colorado.

U.S. Fish and Wildlife Service. 2014g. Southwestern willow flycatcher (*Empidonax traillii extimus*) 5-year review and evaluation. U.S. Fish and Wildlife Service, Phoenix, Arizona.

U.S. Fish and Wildlife Service. 2014h. Threatened status for Gunnison sage grouse; final rule. Federal Register Vol. 79, No. 224. pp. 69192-69310.

U.S. Fish and Wildlife Service. 2014i. Designation of critical habitat for Gunnison sage grouse; final rule. Federal Register Vol. 79, No. 224. pp. 69312-69363.

U.S. Fish and Wildlife Service. 2014l. Mitchell's saytr butterfly (*Neonympha mitchellii mitchellii*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Midwest Region, East Lansing Field Office, East Lansing, Michigan.

U.S. Fish and Wildlife Service. 2014m. Revised recovery plan for the pallid sturgeon (*Scaphirhynchus albus*). U.S. Fish and Wildlife Service, Denver, Colorado.

U.S. Fish and Wildlife Service. 2014n. Threatened species status for northern Mexican gartersnake and narrow-headed gartersnake. Federal Register Vol. 79, No. 130. pp. 38678-38746.

U.S. Fish and Wildlife Service. 2014o. Threatened species status for black pinesnake. Federal Register Vol. 79, No. 194. pp. 60406-60419.

U.S. Fish and Wildlife Service. 2014p. Determination of threatened status for the western Distinct Population Segment of the yellow-billed cuckoo (*Coccyzus americanus*). Federal Register Vol. 79, No. 192. pp. 59991-60038.

U.S. Fish and Wildlife Service. 2014q. Designation of critical habitat for the western distinct population segment of the yellow-billed cuckoo; Proposed rule. Federal Register Vol. 79, No. 158. pp. 48548-48652.

U.S. Fish and Wildlife Service. 2014r. Designation of critical habitat for *Physaria globosa* (Short's bladderpod), *Helianthus verticillatus* (whorled sunflower), and *Leavenworthia crassa* (fleshy-fruit gladecress); Final rule. Federal Register Vol. 79, No. 165. pp. 50990-51039.

U.S. Fish and Wildlife Service. 2014s. 5-year review for Kral's water-plantain (*Sagittaria secundifolia*). U.S. Fish and Wildlife Service, Southeast Region, Alabama Ecological Services Field Office Daphne, Alabama. 16 pp.

U.S. Fish and Wildlife Service. 2014t. 5-year review for Navajo sedge (*Carex specuicola*). U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, Phoenix, Arizona. 31 pp.

U.S. Fish and Wildlife Service. 2014u. Slender chub (*Erimystax cahni*), 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Cookville Ecological Services Field Office, Cookville, Tennessee.

U.S. Fish and Wildlife Service. 2014v. Palezone shiner (*Notropis albizonatus*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Kentucky Ecological Services Field Office, Frankfort, Kentucky.

U.S. Fish and Wildlife Service. 2014w. Endangered species status for the Zuni bluehead sucker; Final Rule. Federal Register Vol. 79, No. 142. pp. 43132-43161.

U.S. Fish and Wildlife Service. 2015a. Endangered species status for the Big Sandy crayfish and the Guyandotte River crayfish; Proposed rule. Federal Register Vol. 80, No. 66. pp. 18710-18739.

U.S. Fish and Wildlife Service. 2015b. Flattened musk turtle fact sheet. Downloaded from www.fws.gov. Accessed July 2015.

U.S. Fish and Wildlife Service. 2015c. Designation of critical habitat for black pinesnake; Proposed rule: Reopening of comment period. Federal Register Vol. 80, No. 47. pp. 12845-12874.

U.S. Fish and Wildlife Service. 2015d. 2015 Indiana bat population estimate. Available at: <http://www.fws.gov/midwest/Endangered/mammals/inba/pdf/2015IBatPopEstimate25Aug2015v2.pdf>

U.S. Fish and Wildlife Service. 2015e. Threatened species status for Kentucky arrow darter with 4(d) rule. Proposed Rule. Federal Register Vol. 80, No. 195. pp. 60962-60988.

U.S. Fish and Wildlife Service. 2015f. Blackside dace *Phoxinus cumberlandensis* (=Blackside dace *Chrosomus cumberlandensis*) 5-year review and evaluation. U.S. Fish and Wildlife Service, Southeast Region, Kentucky Ecological Services Field Office, Frankfort, Kentucky.

U.S. Fish and Wildlife Service. 2015g. Threatened species status for the eastern massasauga rattlesnake. Proposed Rule. Federal Register Vol. 80, No. 189. pp. 58688-58701.

U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration. 2003. Designation of critical habitat for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*). Federal Register Vol. 68, No. 53. pp. 13370-13495.

U.S. Fish and Wildlife Service and U.S. Office of Surface Mining Reclamation and Enforcement. 2009. Coal mining in Tennessee minimum guidelines for the development of protection and enhancement plans for blackside dace (*Phoxinus cumberlandensis*).

U.S. Fish and Wildlife Service, Office of Surface Mining Reclamation and Enforcement, and Interstate Mining Compact Commission. 2009. Rangewide Indiana bat protection and enhancement guidelines. Unpublished document. Available at:
<http://www.fws.gov/frankfort/pdf/INBATPEPGuidelines.pdf>

U.S. Geological Survey. 2011. Coal Fields. United States Department of the Interior (U.S. DOI) <http://nationalatlas.gov/atlasftp.html?openChapters=chpgeol#chpgeol>

U.S. Office of Surface Mining Reclamation and Enforcement. 2011. Biological Assessment Supplement. Kayenta Mine Permit Renewal (Navajo County, Arizona). Office of Surface Mining Reclamation and Enforcement, Western Region.

Venarsky, M.P., F.M. Wilhelm, and F.E. Anderson. 2007. Conservation strategies supported by non-lethal life history sampling of the U.S. federally listed Illinois cave amphipod, *Gammarus acherondytes*. *Journal of Crustacean Biology* 27:202-211.

Wang, N., C.G. Ingersoll, J.L. Kunz, W.G. Brumbaugh, C.M. Kane, R.B. Evans, S. Alexander, C. Walker, and S. Bakaletz, 2013. Toxicity of sediments potentially contaminated by coal mining and natural gas extraction to Unionid mussels and commonly tested benthic invertebrates. *Environmental Toxicology and Chemistry* 32:207-221.

Waters, T. F. 1995. Sediment in streams: sources, biological effects, and control. American Fisheries Soc. Monograph 7, Bethesda, Maryland. 251 pp.

Warren, M.L. and B.M. Burr. 2014. Freshwater Fishes of North America: Volume 1: Petromyzontidae to Catostomidae. Baltimore: Johns Hopkins University Press.

Warren, M.L., Jr., B.M. Burr, S.J. Walsh, H.L. Bart, Jr., R.C. Cashner, D.A. Etnier, B.J. Freeman, B.R. Kuhajda, R.L. Mayden, H.W. Robison, S.T. Ross, and W.C. Starnes. 2000. Diversity, distribution, and conservation status of the native freshwater fishes of the southern United States. *Fisheries* 25(10):7-29.

Wilhelm, F.M., S.J. Taylor, and G.L. Adams. 2006. Comparison of routine metabolic rates of the stygobite, *Gammarus acherondytes* (Amphipoda: Gammaridae) and the stygophile, *Gammarus troglophilus*. *Freshwater Biology* 51:1162-1174.

Williams, J.D., A.E. Bogan, and J.T. Garner. 2008. Freshwater mussels of Alabama and the Mobile Basin in Georgia, Mississippi and Tennessee. University of Alabama Press, Tuscaloosa.

Williams, J.D., A.E. Bogan, J. Brim Box, N.M. Burkhead, R.S. Butler, A. Contreras-Arqueta, K.S. Cummings, J.T. Garner, J.L. Harris, R.G. Howells, S.J. Jepsen, N.A. Johnson, T.J. Morris, T.L. Myers, E. Naranjo García, and J.M. Wisniewski. In press. Conservation status of North American mussels. *Fisheries*.

Wolcott, L.T. and R.J. Neves 1990. Impacts of siltation on the mussel fauna of the Powell River, Virginia. Final report to the U.S. Fish and Wildlife Service Asheville, North Carolina.

Wolcott, L.T. and R.J. Neves. 1994. Survey of the fresh-water mussel fauna of the Powell River, Virginia *Banisteria* 3: 1-14.

Wood, P. J., and P. D. Armitage. 1997. Biological effects of fine sediment in the lotic environment. *Environmental Management*. 21:203-217.

Young, J. R. 1994. The influence of sexual selection on phenotypic and genetic divergence among sage grouse populations. Dissertation, Purdue University, West Lafayette, Indiana, USA.

Young, J.R., C.E. Braun, S.J. Oyler-McCance, J.W. Hupp, and T.W. Quinn. 2000. A new species of sage-grouse (Phasianidae: *Centrocercus*) from southwestern Colorado. *Wilson Bulletin* 112:445-453.

Zettler, L.W., Ahuja, N. S., and McInnis, T. M., Jr. 1996. Insect pollination of the endangered monkey-face orchid (*Platanthera integrilabia*) in McMinn County, Tennessee: One last glimpse of a once common spectacle, *Castanea* 61:14-24.

Zipper, C.E., B. Beaty, G.C. Johnson, J.W. Jones, J.L. Krstolic, B.J.K. Ostby, W.J. Wolfe, and P. Donovan. 2014. Freshwater mussel population status and habitat quality in the Clinch River, Virginia and Tennessee, USA: A featured collection. *Journal of the American Water Resources Association (JAWRA)* 1-13.

Section 7 Consultation and MOU – Outreach Plan and Tentative Schedule

June 5 –

(b) (5)

RE: Issues with current coordination process

***IMCC indicated their interest in being involved in the entire consultation process, including a review of all associated documents (MOU, Biological Assessment, Biological Opinion)**

June 7, 2017

(b) (5)

June 23 –

(b) (5)

July 14 –

(b) (5)

July 19 –

Confirmed meeting date with IMCC in St. Louis

Proposed Agenda:

- 1. (b) (5)
- 2. (b) (5)
- 3. (b) (5)
- 4. (b) (5)

July 31 –

(b) (5)

August 4 –

(b) (5)

September 1 –

(b) (5)

October 6 –

(b) (5)

October 16 –

(b) (5)

October 30 –

(b) (5)

(b) (5)

6/19/2017

November 13 – (b) (5)

(b) (5)

November 30 – (b) (5)

Assumptions:

(b) (5)

- 1.
- 2.
- 3.
- 4.
- 5.

(b) (5)

Option

October 30 - Option: Publish Draft MOU and/or BiOP in FR with 60 day comment period.

December 29 – (b) (5)

January 26, 2018 – (b) (5)

February 9 - (b) (5)

February 26, 2018 – (b) (5)



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240



OCT 21 2005

Joseph M. Lovett, Executive Director
Appalachian Center for the Economy and the Environment
Post Office Box 507
Lewisburg, West Virginia 24901

Dear Mr. Lovett:

This letter is to inform you of the Department's final decision of the matters raised in your April 19, 2005, request that the Office of Surface Mining (OSM) inspect the Mettiki E Mine pursuant to section 517(h)(1) of the Surface Mining Control and Reclamation Act of 1977 (the Act) and the implementing regulations at 30 CFR. Part 842. For reasons set forth herein, OSM will not conduct an inspection.

Your request expresses dissatisfaction with decisions by the West Virginia Department of Environmental Protection (WVDEP) to issue permits which you allege may result in acid mine drainage. Specifically, you identify the recently-issued permit for the Mettiki E Mine and request an inspection "because the company plans to mine soon." In support of your request, you submitted material that is comprised ostensibly of documents and testimony from your appeal of WVDEP's decision to the West Virginia Surface Mine Board. In short, you are requesting OSM to review the permit decision of WVDEP with which you disagree.

SMCRA provides specific provisions in section 514 for seeking review of permit decisions. In this instance, because West Virginia has an approved state program, the appeal of the permit decision at issue here would lie under the state laws and regulations that West Virginia adopted to assume exclusive regulatory jurisdiction pursuant to section 503 of the Act. Section 517(h)(1) allows a person who is or may be adversely affected by a surface coal mining operation to request an inspection by providing written notification of a violation of the Act which that person "has reason to believe exists at the surface mine site." Your request does not provide any basis to conclude that a violation exists at the mine site. Rather, your request consists of your disagreements with findings made by WVDEP in reaching its decision that the permit application complies with applicable requirements of the West Virginia program.

A request for inspection under section 517 (h)(1) is not an alternative avenue for seeking review of the regulatory authority's decision to issue a permit. If the permit decision here were one issued by OSM as the regulatory authority under a federal program, any objections would have to be raised and resolved through the specific appeal process pursuant to section 514. Section 514 expressly requires that any person adversely affected by a decision to approve a permit application request a hearing on the reasons for

the final determination within 30 days of notification of the final decision. Both the plain language of section 517(h)(1) and the specific procedures in section 514 for an appeal of a permit decision precludes one from simply recasting objections to a permit decision as a violation at a mine site in an attempt to collaterally attack a regulatory authority's decision to approve a permit application. Such an approach is impermissible since it would allow anyone dissatisfied with the decision of the regulatory authority, administrative review board, or a court to circumvent the appeal process established under the Act, including the express limitation periods for seeking such review.

Another aspect of the Act's statutory scheme precludes granting your request. West Virginia has been granted primacy under the Act, and therefore has exclusive jurisdiction over the regulation of surface coal mining operations within its borders. Section 503(a). As federal courts have repeatedly held, the Act's allocation of exclusive jurisdiction was "careful and deliberate" by providing for "mutually exclusive regulation by either the Secretary or the state, but not both." *Bragg v. West Virginia Coal Ass'n*, 248 F. 3d 275, 293-94 (4th Cir. 2001), cert. denied, 534 U.S. 1113 (2002); See also *Pennsylvania Federation of Sportmen's Clubs, Inc. v. Hess*, 297 F. 3d 310, 318 (3d Cir. 2002); *Haydo v. Amerikohl Mining Inc.*, 830 F. 2d 494, 497 (3d Cir. 1987).

In a primacy state, permit decisions and any appeals are solely matters of the state jurisdiction in which OSM plays no role. The role of the state and federal governments were explained by the U.S. Court of Appeals for the District of Columbia Circuit as follows:

[T]he state is sole issuer of permits. In performing this centrally important duty, the state regulatory authority decides who will mine in what areas, how long they may conduct mining operations, and under what conditions the operations will take place. It decides whether a permittee's techniques for avoiding environmental degradation are sufficient and whether the proposed reclamation plan is acceptable.

* * * *

Administrative and judicial appeals of permit decisions are matters of state jurisdiction on which the Secretary plays no role.

In re: Permanent Surface Mining Regulation Lit., 653 F. 2d 514, 519 (DC Cir 1981) (*en banc*) (herein after "Regulation Litig.").

In short, OSM does not possess concurrent or parallel jurisdiction over this matter. See *Pennsylvania Federation*, 297 F. 3d at 318. ("Exclusive, in other words, means just that.....It doesn't mean 'parallel' or 'concurrent'"). OSM does not retain "veto" authority over state permit decisions. *Regulation Litig.*, 653 F. 2d at 519 n. 7. Accord *Bragg*, 248 F. 3d at 295. OSM intervention at any stage of the state permit review and appeal process would in effect terminate the state's exclusive jurisdiction over the matter and frustrates the careful and deliberate statutory design. See *Bragg*, 248 F. 3d at 295. It would

encourage persons dissatisfied with state decisions to circumvent the very state laws and procedures that the Act insists states enact and maintain in order to exercise exclusive regulatory jurisdiction. The statutory design requires citizens in primacy states to pursue their claims under the procedures and in the forums established under the state laws enacted to obtain primacy.

This matter demonstrates the very concerns just expressed about circumventing the deliberate statutory scheme. You initially appealed the WVDEP permit decisions to the West Virginia Surface Mining Board. After the decision was left intact, you appealed to the circuit courts of West Virginia. Later, you filed a request with OSM for an inspection, and informed OSM that your appeal to the state circuit court was in the process of being voluntarily dismissed. As we explained earlier, such an approach conflicts with the Act in two ways. First, it would allow persons dissatisfied with a permitting decision to circumvent the specific appeal process set forth in the Act for permit decisions. Those dissatisfied with a regulatory authority's decision to approve a permit application could then pick and choose where and when to contest such a decision without regard to the specific procedure, forum and limitation period established under the Act. Second, where the decision in question is issued by a primacy state, it would conflict with the federalism established under the Act by allowing OSM to commandeer the state permit review and appeal process whenever a person forgoes the right to appeal a permit decision or, as is the case here, abandons an administrative or judicial appeal under state law. In sum, the Act does not provide for alternative avenues or forums for seeking relief from a permit decision.

The Charleston Field Office (CHFO) issued a ten-day notice (TDN) to WVDEP upon receipt of your request. WVDEP responded to the TDN by asserting that OSM cannot issue a TDN in such circumstances because it would be tantamount to allowing a federal appeal of a state permit decision. WVDEP also explained why the permit decision conformed to applicable requirements under state law. The CHFO proceeded to undertake a protracted three-month review of the state permit and then concluded that it would conduct an inspection. However, the CHFO apparently recognized that the nature and circumstances of your request did not fit comfortably within the scope of section 517(h)(1) and 521(a)(1) of the Act since, according to the CHFO, "the federal inspection process will be somewhat different from that normally occurring after an inappropriate response determination." Rather than conducting an on-the-ground inspection of the mine site, the CHFO stated that it would evaluate further available information concerning the permit including consulting anyone else having relevant information. WVDEP sought informal review of the CHFO determination under 30 CFR 842.11.

The Regional Director of OSM's Application Region is informing WVDEP that the CHFO erred in issuing the TDN for reasons consistent with this final response to your request for an inspection.

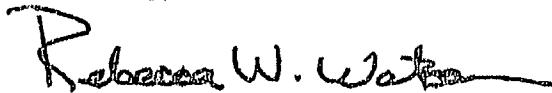
Your complaint of April 19th states that the Mettiki B Mine, as permitted, will violate water quality standards established under the Clean Water Act. Neither surface water quality standards nor effluent limitations apply to ground water, including mine pools.

Should this mine have post-mining surface discharges into waters of the U.S. or of the state of West Virginia, they would be subject to applicable effluent limitations and surface water quality standards in accordance with the State counterpart to 30 CFR 817.42. However, the Mettiki E Mine will not have a post-mining gravity discharge to the surface.

The only water to leave the mine pool after mining will be groundwater, primarily reaching the abandoned Dobbin mine, with the possibility of some reaching the abandoned Alpine mine. The applicable standard for such groundwater flow is the State counterpart to 30 CFR 817.41(a). Further, such flow will not necessarily make Mettiki responsible for meeting effluent limitation at any existing discharges from those mines. There is no basis in the Secretary's regulations for the term "SMCRA discharge" as used and characterized by the CHFO in its letter of September 15th to WVDEP. Responsibility and accountability for establishing applicable standards and accountable parties for existing surface discharges at other mines falls within the CWA authority.

This decision to not conduct an inspection as requested in your letter of April 19, 2005, constitutes the final decision of the Department of the Interior.

Sincerely,



Rebecca W. Watson
Assistant Secretary,
Land and Minerals Management



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240



OCT 21 2005

Joseph M. Lovett, Executive Director
Appalachian Center for the Economy and the Environment
Post Office Box 507
Lewisburg, West Virginia 24901

Dear Mr. Lovett:

This letter is to inform you of the Department's final decision of the matters raised in your April 19, 2005, request that the Office of Surface Mining (OSM) inspect the Mettiki E Mine pursuant to section 517(h)(1) of the Surface Mining Control and Reclamation Act of 1977 (the Act) and the implementing regulations at 30 CFR. Part 842. For reasons set forth herein, OSM will not conduct an inspection.

Your request expresses dissatisfaction with decisions by the West Virginia Department of Environmental Protection (WVDEP) to issue permits which you allege may result in acid mine drainage. Specifically, you identify the recently-issued permit for the Mettiki E Mine and request an inspection "because the company plans to mine soon." In support of your request, you submitted material that is comprised ostensibly of documents and testimony from your appeal of WVDEP's decision to the West Virginia Surface Mine Board. In short, you are requesting OSM to review the permit decision of WVDEP with which you disagree.

SMCRA provides specific provisions in section 514 for seeking review of permit decisions. In this instance, because West Virginia has an approved state program, the appeal of the permit decision at issue here would lie under the state laws and regulations that West Virginia adopted to assume exclusive regulatory jurisdiction pursuant to section 503 of the Act. Section 517(h)(1) allows a person who is or may be adversely affected by a surface coal mining operation to request an inspection by providing written notification of a violation of the Act which that person "has reason to believe exists at the surface mine site." Your request does not provide any basis to conclude that a violation exists at the mine site. Rather, your request consists of your disagreements with findings made by WVDEP in reaching its decision that the permit application complies with applicable requirements of the West Virginia program.

A request for inspection under section 517 (h)(1) is not an alternative avenue for seeking review of the regulatory authority's decision to issue a permit. If the permit decision here were one issued by OSM as the regulatory authority under a federal program, any objections would have to be raised and resolved through the specific appeal process pursuant to section 514. Section 514 expressly requires that any person adversely affected by a decision to approve a permit application request a hearing on the reasons for

the final determination within 30 days of notification of the final decision. Both the plain language of section 517(h)(1) and the specific procedures in section 514 for an appeal of a permit decision precludes one from simply recasting objections to a permit decision as a violation at a mine site in an attempt to collaterally attack a regulatory authority's decision to approve a permit application. Such an approach is impermissible since it would allow anyone dissatisfied with the decision of the regulatory authority, administrative review board, or a court to circumvent the appeal process established under the Act, including the express limitation periods for seeking such review.

Another aspect of the Act's statutory scheme precludes granting your request. West Virginia has been granted primacy under the Act, and therefore has exclusive jurisdiction over the regulation of surface coal mining operations within its borders. Section 503(a). As federal courts have repeatedly held, the Act's allocation of exclusive jurisdiction was "careful and deliberate" by providing for "mutually exclusive regulation by either the Secretary or the state, but not both." *Bragg v. West Virginia Coal Ass'n*, 248 F. 3d 275, 293-94 (4th Cir. 2001), cert. denied, 534 U.S. 1113 (2002); See also *Pennsylvania Federation of Sportmen's Clubs, Inc. v. Hess*, 297 F. 3d 310, 318 (3d Cir. 2002); *Haydo v. Amerikohl Mining Inc.*, 830 F. 2d 494, 497 (3d Cir. 1987).

In a primacy state, permit decisions and any appeals are solely matters of the state jurisdiction in which OSM plays no role. The role of the state and federal governments were explained by the U.S. Court of Appeals for the District of Columbia Circuit as follows:

[T]he state is sole issuer of permits. In performing this centrally important duty, the state regulatory authority decides who will mine in what areas, how long they may conduct mining operations, and under what conditions the operations will take place. It decides whether a permittee's techniques for avoiding environmental degradation are sufficient and whether the proposed reclamation plan is acceptable.

* * * *

Administrative and judicial appeals of permit decisions are matters of state jurisdiction on which the Secretary plays no role.

In re: Permanent Surface Mining Regulation Lit., 653 F. 2d 514, 519 (DC Cir 1981) (*en banc*) (herein after "Regulation Litig.").

In short, OSM does not possess concurrent or parallel jurisdiction over this matter. See *Pennsylvania Federation*, 297 F. 3d at 318. ("Exclusive, in other words, means just that.....It doesn't mean 'parallel' or 'concurrent'"). OSM does not retain "veto" authority over state permit decisions. *Regulation Litig.*, 653 F. 2d at 519 n. 7. Accord *Bragg*, 248 F. 3d at 295. OSM intervention at any stage of the state permit review and appeal process would in effect terminate the state's exclusive jurisdiction over the matter and frustrates the careful and deliberate statutory design. See *Bragg*, 248 F. 3d at 295. It would

encourage persons dissatisfied with state decisions to circumvent the very state laws and procedures that the Act insists states enact and maintain in order to exercise exclusive regulatory jurisdiction. The statutory design requires citizens in primacy states to pursue their claims under the procedures and in the forums established under the state laws enacted to obtain primacy.

This matter demonstrates the very concerns just expressed about circumventing the deliberate statutory scheme. You initially appealed the WVDEP permit decisions to the West Virginia Surface Mining Board. After the decision was left intact, you appealed to the circuit courts of West Virginia. Later, you filed a request with OSM for an inspection, and informed OSM that your appeal to the state circuit court was in the process of being voluntarily dismissed. As we explained earlier, such an approach conflicts with the Act in two ways. First, it would allow persons dissatisfied with a permitting decision to circumvent the specific appeal process set forth in the Act for permit decisions. Those dissatisfied with a regulatory authority's decision to approve a permit application could then pick and choose where and when to contest such a decision without regard to the specific procedure, forum and limitation period established under the Act. Second, where the decision in question is issued by a primacy state, it would conflict with the federalism established under the Act by allowing OSM to commandeer the state permit review and appeal process whenever a person forgoes the right to appeal a permit decision or, as is the case here, abandons an administrative or judicial appeal under state law. In sum, the Act does not provide for alternative avenues or forums for seeking relief from a permit decision.

The Charleston Field Office (CHFO) issued a ten-day notice (TDN) to WVDEP upon receipt of your request. WVDEP responded to the TDN by asserting that OSM cannot issue a TDN in such circumstances because it would be tantamount to allowing a federal appeal of a state permit decision. WVDEP also explained why the permit decision conformed to applicable requirements under state law. The CHFO proceeded to undertake a protracted three-month review of the state permit and then concluded that it would conduct an inspection. However, the CHFO apparently recognized that the nature and circumstances of your request did not fit comfortably within the scope of section 517(h)(1) and 521(a)(1) of the Act since, according to the CHFO, "the federal inspection process will be somewhat different from that normally occurring after an inappropriate response determination." Rather than conducting an on-the-ground inspection of the mine site, the CHFO stated that it would evaluate further available information concerning the permit including consulting anyone else having relevant information. WVDEP sought informal review of the CHFO determination under 30 CFR 842.11.

The Regional Director of OSM's Application Region is informing WVDEP that the CHFO erred in issuing the TDN for reasons consistent with this final response to your request for an inspection.

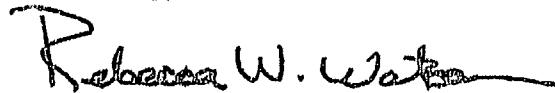
Your complaint of April 19th states that the Mettiki B Mine, as permitted, will violate water quality standards established under the Clean Water Act. Neither surface water quality standards nor effluent limitations apply to ground water, including mine pools.

Should this mine have post-mining surface discharges into waters of the U.S. or of the state of West Virginia, they would be subject to applicable effluent limitations and surface water quality standards in accordance with the State counterpart to 30 CFR 817.42. However, the Mettiki E Mine will not have a post-mining gravity discharge to the surface.

The only water to leave the mine pool after mining will be groundwater, primarily reaching the abandoned Dobbin mine, with the possibility of some reaching the abandoned Alpine mine. The applicable standard for such groundwater flow is the State counterpart to 30 CFR 817.41(a). Further, such flow will not necessarily make Mettiki responsible for meeting effluent limitation at any existing discharges from those mines. There is no basis in the Secretary's regulations for the term "SMCRA discharge" as used and characterized by the CHFO in its letter of September 15th to WVDEP. Responsibility and accountability for establishing applicable standards and accountable parties for existing surface discharges at other mines falls within the CWA authority.

This decision to not conduct an inspection as requested in your letter of April 19, 2005, constitutes the final decision of the Department of the Interior.

Sincerely,



Rebecca W. Watson
Assistant Secretary,
Land and Minerals Management

The White House
Presidential Personnel Office
SKC/SES BIO SHEET

This information is necessary to begin the clearance process. Return to White House Liaison when completed.

PART I: PERSONAL INFORMATION (TO BE COMPLETED BY THE CANDIDATE)

1. FULL NAME (Last, First, Middle): **Landon Tucker Davis**

2. SOCIAL SECURITY NUMBER:

(b) (6)

3. CURRENT RESIDENTIAL ADDRESS (Number, Street, City, State, ZIP Code)

(b) (6)

4. VOTING ADDRESS IN 2016 (Number, Street, City, State, ZIP Code, if different than current address)

(b) (6)

5. PLACE OF BIRTH (City, State; if not U.S., state, country)

(b) (6)

6. GENDER

Male

7. DATE OF BIRTH

(b) (6)

8. ETHNIC HERITAGE

(b) (6)

9. RACE

(b) (6)

10. POLITICAL PARTY

(b) (6)

11. HOME PHONE

(b) (6)

12. CELL PHONE

(b) (6)

13. WORK PHONE

14. PERSONAL EMAIL

(b) (6)

15. WORK EMAIL

landon_davis@ios.doi.gov

16. CURRENT POSITION (Title, Company)

Special Assistant to the Secretary, U.S. Department of the Interior

17. WORK ADDRESS (Number, Street, City, State, Zip)

1849 C Street, NW, Washington, DC, 20240

18. PLEASE LIST ALL SOCIAL MEDIA ACCOUNTS (Or say none if you have none)

(b) (6)

(b) (6)

19. EDUCATION (Degree, Institution, Year)

Bachelor of Science, Radford University, 2013

20. AWARDS

(b) (6)

21. MILITARY SERVICE (Rank, Branch, Years)

(b) (6)

22. PREVIOUS PRESIDENTIAL APPOINTMENTS

(b) (6)

PART II: POSITION INFORMATION (TO BE COMPLETED BY WHITE HOUSE LIAISON)

1. POSITION TITLE

2. AGENCY

2. APPOINTMENT TYPE

3. GRADE

4. OPM NUMBER

5. WH LIAISON NAME

6. WH LIAISON PHONE

7. WH LIAISON EMAIL

Landon Tucker Davis

(b) (6)

[REDACTED]

[REDACTED]

[REDACTED]

Education:

Radford University, Radford, VA--May 2013
Bachelor of Science in **Journalism**

Work Experience:

58th Presidential Inaugural Committee Office of the Public Liaison Dec. 2016-Jan 2017
General Liaison/Diversity Outreach Salary: \$(b) (6)

Donald J. Trump for President, Inc. Oct 2015- Novr 2016
Salary: \$(b) (6)

• ***Virginia State Field Director***

Directed GOTV operations, direct mail, volunteer recruitment and public endorsements for the campaign which led to a resounding victory in the March 1 primary.

• ***West Virginia State Director***

Recruited delegates for the Republican National Convention, implemented GOTV plan to elect delegates and secured a resounding victory for Mr. Trump in the May 10 primary. Secured the West Virginia Coal Association endorsement (the first endorsement made during a primary).

• ***Virginia Deputy State Director***

Managed GOTV operations with grassroots activists/party officials as well as federal, state and local elected officials. Organized an energy policy roundtable with Mr. Trump and local coal operators/business owners.

Americans for Prosperity- Virginia

Regional Director May 2015-Aug. 2015
Salary: \$(b) (6)

- Built grassroots relationships for the state chapter with political, business, media and community leaders.
- Mobilized and educated grassroots activists on issues within the organization's mission.
- Utilized activists to become involved in AFP volunteer phone banking, door-to-door canvassing, and neighborhood events on state-based policy initiatives.

Ed Gillespie for Senate Regional Director

Jan. 2014-Nov. 2014
Salary: \$(b) (6)

- Directed get-out-the-vote and convention operations in Virginia's 5th, 6th and 9th Congressional Districts.
- Worked with state and local elected officials as well as congressional campaigns to implement GOTV strategy while meeting each region's own specific needs.
- Prepared and disseminated talking points to key leaders regarding relevant issues of the campaign.
- Represented candidate at various community events (Rotary clubs, chambers of commerce and trade associations).

Nick Rush for Delegate May 2013-Nov. 2013
Campaign Manager Salary: **\$(b) (5)**

- Performed day-to-day management of incumbent's House of Delegates campaign.
- Lead extensive mail program while directing campaign strategy with earned media and get-out-the-vote efforts.
- Developed and maintained relationships with donors and constituents.
- Drafted press releases for local and state media.
- Developed copy for collateral material and web content (brochures, direct mail, Facebook and Twitter).

Faces of Coal/Count on Coal June 2012- April 2013
Outreach Director Salary: **\$(b) (6)**

- Coordinated issue advocacy, earned media, event management, and coalition building.
- Represented organization at various trade shows and conferences.
- Worked to plan, organize and implement special events ranging from 2,000- 8,000 attendees.
- Maintained relationships with legislators, staff members, civic groups and business leaders.
- Coordinated volunteer operations for community events.
- Compiled data for funder reports, press packets and directed letters to the editor campaigns.

Clubs and Organizations:

Big Sandy Soil and Water Conservation Board, Director
Frederick Douglass Foundation
10th Amendment Foundation
Honorable Order of Kentucky Colonels
Appalachian Events Committee, Radford University
Republican Party of Buchanan County
Buchanan County Humane Society
Student Government Association, Southwest Virginia Community College

References:

(contact information available upon request)

Ed W. Gillespie
Rep. Morgan Griffith
Virginia State Sen. Bill Carrico
Virginia Delegate Todd Pillion
Virginia Delegate Chris Head
Virginia Delegate Nick Rush
Virginia Delegate Terry Kilgore
West Virginia State Sen. Mark Maynard
Jerry Mullins, Vice President, National Mining Association
Jerry W. Kilgore, Fmr. Attorney General of Virginia
Jim Bunn, Fmr. President West Virginia Coal Association
John K. Matney, Fmr. President Rapoca Coal Company
John Raese, President and CEO of Greer Industries
Petrina Jones, Fmr. Executive Director, FACES of Coal- Virginia
Terry Headly, Executive Director, American Coal Council
Sandy Liddy Bourne, General Manager, George Allen Strategies
Donnie Ratliff, Fmr. Vice President of External Affairs, Alpha Natural Resources
Danny Smith, Fmr. Senior Vice President of Energy and Property, Norfolk Southern
Harry Childress, President, Virginia Coal and Energy Alliance